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METAVERSE, IOT, PRO AV ... AND ALL THAT BINDS THEM



Installation:
A Museum of a 'Giant Stride'
into the Past

Interview:
Ron Holtdijk, Director,
Business Communications,
Sennheiser

Spotlight:
Intricon - Making Sound Alive
with Passion



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“

Overall, I believe that the future of IoT and the metaverse is closely linked with the future of professional AV – with this symbiotic relationship having the potential to bring significant benefits in terms of efficiency, productivity, and user experience.”

Naval Joshi, co-founder, director and engineer, NXT INTERACTIVE

To read more go to our Feature on page **48**



In this issue we bring you an extensive in-depth coverage of The Dinosaur Museum and Fossil Park in Gujarat, India. Ahmedabad-based AV consulting major Rhino Engineers and AV systems integrator Vama Communications worked together to create a grand audio-visual spectacle about the largest terrestrials that once strode the land. Our Feature column peeks into the intricate world of the Metaverse and the Internet of Things (IoT) and its relationship with professional AV. We also chat with Ron Holtdijk, director, Business Communications, Sennheiser, about the company's Business Communications unit, trends and the future. Hope you enjoy the read.



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Ultraligero



16:9

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🕒 31 Jan-3 Feb 2023

📍 Fira Barcelona, Gran Via

📍 3N300 (Booth)

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Scan to get more detail

Meeting the Needs and Expectations of the AV Industry in Asia



InfoComm Southeast Asia 2022 show floor.



*The InfoComm Southeast Asia that was held in Bangkok in November 2022, exceeded expectations of exhibitors and visitors alike. Next year the show will be re-branded as an Asia show and moved to May. SI Asia chats with **Richard Tan, executive director, InfoCommAsia Pte Ltd** about the timing of the show and how the company intends to broaden the show to encompass Asia.*

We felt that InfoComm Southeast Asia exceeded expectations. Your view on this.

The sight of most people walking down the streets of Bangkok with masks on, was a reminder that we had not left Covid behind. The very infectious XBB variant spreading through much of Asia in the months leading to the show had caused a surge in infection cases, and people were cautious about traveling or being in crowded places. So we knew from the get-go that we should not be expecting throngs of people visiting this, or any other show for that matter, and we decided to focus on quality instead of quantity. We secured the collaboration of some 130 government agencies and trade associations across all the Southeast Asian countries to promote InfoComm Southeast Asia within



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Hosted buyers tech tour during InfoComm SEA.

their organizations and to identify decision makers and influencers that we could invite to the show as hosted buyers. This was done through laborious one-on-one meetings conducted over months of travel to all the countries in the region, and it formed the backbone of an extensive promotion program to promote the show.

The result was a show floor that was constantly filled with highly targeted and relevant visitors – both AV channel professionals and vertical market end-users – that allowed our exhibitors to have meaningful and unhurried meetings and conversations in their booths. Among them were high-ranking officers from the defence industry and police forces, representatives from transport, education, tourism, healthcare and telecommunications ministries as well as members of trade associations like the Museum Association of Thailand that brought together more than 100 of their members to visit the show.

At the end of the day, however, it is not for us to say that the show exceeded expectations. This has to be reflected in exhibitors rebooking for the 2023 show, which far exceeded our expectations. The majority of

exhibitors have increased the size of their booths for next year's show, and quite a few companies that did not participate in this year's show came by to tell us that they will want to be part of it next year. We can already say with confidence that the 2023 show will be far larger than this one. And this bears testimony to how the show met the expectations of our exhibitors this year.

This year the show is being rebranded as an Asia show rather than a Southeast Asia show. Why?

In our conversations with exhibitors over the course of the last two years, many have expressed their desire to have a platform that can bring together all of Asia's AV professionals; that this then can act as a springboard for manufacturers to introduce their companies, technologies and products to the entire Asian market, and which can also allow them to invite their end-user clients to see their solutions first-hand at their booths. This has become increasingly important in light of global geopolitical developments that have led to market fragmentation and technology bifurcation.

They see InfoComm Southeast Asia as being well-positioned to play this role. The show takes place in Thailand, which is centrally located for ease of travel from all Asian countries. Thailand is also an inexpensive and enjoyable destination that is well-loved by people all over; it is not without reason that Bangkok has been voted for multiple years the most visited city in the world. Exhibitors can stage regional and even global meetings during the show and host many of their clients from across all of Asia without breaking their bank.

It is for this reason that we decided to reposition and rename the show to InfoComm Asia. From 2023, we

will actively promote this show to AV professionals from across all of Asia – from Japan and China in the north to India and Australia in the south – while continuing to bring vertical market end-users from Southeast Asia. The combination of these will deliver a platform for all exhibitors to develop and manage channel networks right across all of Asia and to meet with potential Southeast Asian users and buyers of their technology at the same time and in one place.

The venue has also been changed to the Queen Sirikit Convention Centre. What advantages does this venue hold?

The Queen Sirikit National Convention Centre, or QSNCC as it is often referred to, is arguably the oldest exhibition venue in Bangkok. It has played host to many events over the years and is very well known to both local Thais as well as regional visitors to exhibitions in Bangkok. A few years ago, the QSNCC was torn down and completely rebuilt and is now a 5-star property five times larger than its predecessor. The new QSNCC is a versatile venue with a total space of 300,000 square meters offering 8 purpose-built exhibition halls, 4 conference halls, 4 plenary halls, 50 meeting rooms and a retail area that also houses a good number of restaurants, including high-end ones that will allow our exhibitors to host their important guests appropriately.

Of all the exhibition venues in Bangkok, the QSNCC is the most centrally located and sits atop an MRT station that is directly connected to the venue. It provides up to 3,000 parking spaces for visitors who wish to drive.

InfoComm Asia has always been positioned as a premier business event and deserves to be housed in

the best venue that Bangkok can offer, allowing both exhibitors and visitors to travel conveniently to the event and have the best experience at the show.

There is some discomfort about the timing of the 2023 show that is being held in May with the show that just completed in November 2022. What was the thinking behind this?

InfoComm Southeast Asia was held in May when we first launched it in 2019. It was subsequently moved to the later part of the year in 2022 because of the pandemic.

Much research and industry consultation went into deciding on the May date for the 2019 inaugural show; this is the preferred timing for both exhibitors as well as visitors. From a sourcing and buying perspective, end-users have also advised us of their preference for the show to be held in the earlier part of the year. Hence, we are simply moving the show back to its original dates to ensure that it optimally serves the needs of our exhibitors and visitors.

While we are cognizant of the fact that the 2023 show is happening some six months later, many exhibitors have also expressed to us that they expect to see AV market demand surge in the early part of next year as we leave Covid behind and with many governments in the region investing heavily in developing the economy, holding an early show will allow them to take full advantage of this development.

InfoComm Asia will be held from 24 to 26 May in Bangkok, Thailand.

[InfoComm Asia](#)

Sennheiser Well Placed to Take on Opportunities



*Sennheiser Business Communications unit was set up with the sole purpose of offering solutions for the corporate and education sectors with the highest quality audio, modern design, simplicity, usability, and durable materials. With hybrid work and education expected to be the new normal, Sennheiser is well placed to take advantage of the opportunities offered. SI Asia's **Ram Bhavanashi** chats with **Ron Holtdijk**, **director, Business Communications, Sennheiser** about the Business Communications unit, trends and the future.*

Please give us an overview of Sennheiser's Business Communication BU.

Sennheiser Business Communications is the first choice for advanced audio technology that makes collaboration and learning easier. We offer audio solutions for the corporate and education fields. Driven by our passion, we aim to be our customers' strong partner in terms of offering solutions that are intuitive, agnostic and audibly better, while offering

true problem-solving capabilities. Our organizational structure is set up to nurture the needs of our customers by involving leading A/V consultants, top integrators and end users in the ideation and development process of new products.

What has been the focus and direction of Business Communication BU thus far? How would you evaluate the shaping up of the business?

We launched a new addition to the TeamConnect family in the first half of 2022, the TeamConnect Intelligent Speaker (TCISP) for Microsoft Teams Rooms. The TCISP is Sennheiser's first UC solution optimized for mid-sized Microsoft Teams rooms for up to 10 people. It features an omnidirectional speaker that covers a 3.5m radius and seven integrated beamforming microphones to achieve excellent speech intelligibility and double-talk performance. The integration of Microsoft Cortana voice intelligence allows users to control the microphone verbally during meetings without having to fumble with equipment. Through the TCISP, Microsoft Teams also provide live transcription in real-time, with the transcription document being available right after the meeting. This provides an inclusive and highly collaborative environment for remote participants and those who are hard of hearing. Given the popularity of Sennheiser's TeamConnect Ceiling 2 microphone, we are extremely excited to have this new addition to the TeamConnect family that allows us to offer a smart, focused, and inclusive solution for different sized meeting rooms at a very attractive price point.



Sennheiser's TeamConnect Intelligent Speaker for Microsoft Teams Rooms.

We also saw impactful growth across all markets and a huge demand for hybrid meetings solutions as people settle into the “new normal”. In particular, we saw a huge increase in demand for our wireless beamforming ceiling microphone solution TCC2 in the corporate and education verticals. Our supply-chain team did a fantastic job ensuring we were able to meet the delivery timelines expected by our partners and customers.

How Important is the India market for your business and what has been the achievement so far?

Sennheiser has been in the India market for 15 years. We have been growing steadily over the years and have achieved yearly double-digit growth since 2013 in the conference and meeting market space. We are proud to be a market leader and have witnessed how innovation, high quality products and building good relationship with our partners and end users have made a difference to our business. Our key customers are in the major cities in India - from government sector to corporate as well as education. We have dedicated sales teams in Gurgaon, Mumbai, Delhi, Kolkata, Bengaluru and Hyderabad with service centers in Gurgaon & Mumbai (additionally we provide 1st level service support through our regional partners

spread across India). We are now expanding to other cities with a plan to provide high quality UC solutions to more customers in India. India is huge economy with a lot of potential and we look forward to achieving more success in the coming years.

What are some of the risks that the business unit had to deal with in the past few years and how did you respond to them?

While we have certainly not been immune to the global supply chain disruptions, we have been able to weather the disruptions better than some of our competitors due to our procurement foresight and planning. Having a dedicated supply chain team that has stayed a step ahead of our manufacturing has led to our ability to keep our products available and deliverable within reasonable timeframes. Also, the fact that we own our production helped us eliminate the risks associated with relying on third-party manufactures.

As for the risks we face, the unknowns about the future of work are near the top. With so much uncertainty around the globe, it's still unclear whether the global workforce will get back to pre-pandemic in-person levels or if remote work will continue to grow. To address this risk, our strategy is to create solutions for hybrid learning and working, which makes us prepared either way. We provide high-quality audio solutions that are easy-to-use whether meetings or lectures are happening in-person, remotely or a mixture of both. Since markets will respond differently depending on their situation, we will be ready with products that meet their needs.

Hybrid work has become a very common work model and the metaverse has now emerged as an up-and-coming concept. How do you think the business communication sector will evolve in the future?

Post-pandemic, we expect the market for professional meeting solutions to continue to grow due to newly emerging formats of hybrid working and learning. Growth opportunities also arise from new customer requirements in the areas of “mobile working”, “streaming”, and “immersive audio”, which we will fulfill with expanded product offerings, software and service solutions, and digital workflows. We see organizations already moving their events, meetings and trainings into the Metaverse. It is an extremely exciting and dynamic space, and we look forward to seeing how Sennheiser will continue to build the future of audio.

What stands Sennheiser ahead of the competition? Please explain?

Unlike our competitors, we are an independent, family-owned global company that has local market knowledge and that is always expanding. We have more than 75 years of experience crafting quality audio solutions based on the power of German engineering in our own manufacturing facilities and we offer intuitive and agnostic solutions so that end users can focus on what really matters: their individual performance during a presentation, meeting or

lecture. We believe that a remarkable audio experience incorporates intuitive, easy-to-use products that deliver audibly better results. Most importantly, we are never fully satisfied with the status quo. This creative dissatisfaction and the passion to constantly improve is what shapes our remarkable audio solutions and makes us unique as a brand.

We see some overlap of solutions and products between Sennheiser Pro Audio and BizCom divisions. How would you differentiate specifics between the two approaches?

The two business units provide different audio solutions for very different applications and customer groups. The Professional Audio business unit looks after the music, recording, movie, broadcasting and theatre industries and provides audio products for creators while the Business Communications, the business unit that I am heading, offers audio solutions for the corporate and education fields. Having said that, we do have products that serve both business units – one example is the EW-DX, which began shipping to customers this November 2022. The EW-DX is an extension of the Evolution Wireless



The Sennheiser EW-DX is an extension of the Evolution Wireless Digital family.

Digital family and is the most versatile digital wireless system for corporate meetings, lectures as well as live performances in music venues, theatres and worship facilities. Therefore, it is right to say that there are shared products across business units, but there is no overlapping in terms of solutions for the specific applications that each business units serve.

What do you think is the biggest game changing technology in audio in recent times (after the beam-forming technology)?

Technology evolves very quickly; and while I can't say what is considered the biggest game changer, one important change or trend is the use of audio for camera tracking functions. This involves using audio solutions to detect the source of the dialogue and control the camera so that the speaker can be in focus without manual adjustment or repositioning of the camera. Software is also becoming increasingly important as corporations and education institutions look for centralized software for easy management and control of multiple network-enabled devices to streamline processes and workflows.

What are some upcoming trends that you observe in the industry?

With hybrid and remote work becoming the new normal, we see a demand for smarter and more inclusive solutions that can do more than providing good quality audio to users. On the education front, there is a similar demand for solutions that allow educations to provide the same or comparable experience to students regardless of whether they are in the classroom or connecting remotely.

While it goes without saying that the German expertise and engineering is world renowned, how would you compare the receptivity of the Sennheiser brand in APAC compared to the western markets, considering the popularity of American and Japanese products?

With our strong heritage, Sennheiser is recognized as the go-to brand for quality audio in lectures spaces and meeting rooms, not just in the western markets, but in APAC as well, as proven by our growth over the years. As a German brand, we hold ourselves to the highest standards of engineering, testing and quality. Our solutions are intuitive, agnostic and audibly better and deliver true problem-solving capabilities. We have a deep understanding of our customer needs and pain points. The global growth markets, especially APAC, continue to be an area of focus for us and have been investing in countries like India, China and Korea, where we see good evidence of growth opportunities.

What are some of your current/future priorities?

Our goal is to be present with our products in lecture halls and meeting rooms around the world and to ensure that we have an aggressive roadmap to deliver the highest quality audio solutions that support industry standards and deliver on key our parameters - modern design, simplicity, usability, and durable materials.

Sennheiser



Concept Systems Technologies Designs and Installs L-Acoustics at Renovated Hilton Hotel

SINGAPORE: Located in the heart of Orchard Road, Singapore's premier shopping and entertainment district, the Hilton Singapore Orchard was unveiled earlier this year following a \$150-million makeover. This latest hotel is the group's flagship hospitality property in the region and takes pride as the largest Hilton in the Asia Pacific region. The hotel interior exudes warmth, with local design touches and botanically inspired elements, following the 'Singapore, a city in a garden' aesthetic.

To ensure a complete hospitality experience throughout the property, the Hilton Singapore Orchard management chose to install L-Acoustics audio solutions for the two main ballrooms. Local L-Acoustics Certified Provider, **Concept Systems Technologies**, known in the local market for their high-profile audio installations in the hospitality sector, participated in a bid-for-tender process and won the contract for the audio system upgrade. Concept Systems used Soundvision 3D modelling software

to design two bespoke systems for the 810-capacity Grand Ballroom, and the 240-capacity Junior Ballroom. Both ballrooms host a variety of events including government affairs, corporate seminars and dinners, brand product launches, and weddings. This range of events called for systems that produce excellent speech intelligibility while delivering high SPL for music and other dynamic entertainment content.

C.K. Lim, project manager at Concept Systems explained that "Soundvision allowed my team to provide the client with a visual representation of our proposed system designs. Along with SPL and coverage data, we were able to support the proposal by showing that results were in line with the client's key objectives." The system designs were then reviewed and approved by L-Acoustics APAC application engineers.

In the 1,058 sqm Grand Ballroom, four hangs of 2 x L-Acoustics A10i each, installed across the front of the ballroom provide even coverage, with two ground stacks of 2 x KS21i subwoofers providing low-end definition. In the 480 sqm Junior Ballroom, two hangs of 2 x L-Acoustics X12 were sufficient for the smaller function space, with two hanging SB15m subwoofers providing a low-end.

A representative from the Hilton commented, "The ballroom project was delivered brilliantly by the team at Concept Systems. They provided a modern, new system and delivered excellent technical consultancy as an official L-Acoustics partner. We felt confident from the pre-installation phase, right up to the system testing phase. L-Acoustics solutions provide pristine sound for all our guests, from wedding parties and corporate brand directors to highly respected government ministers."

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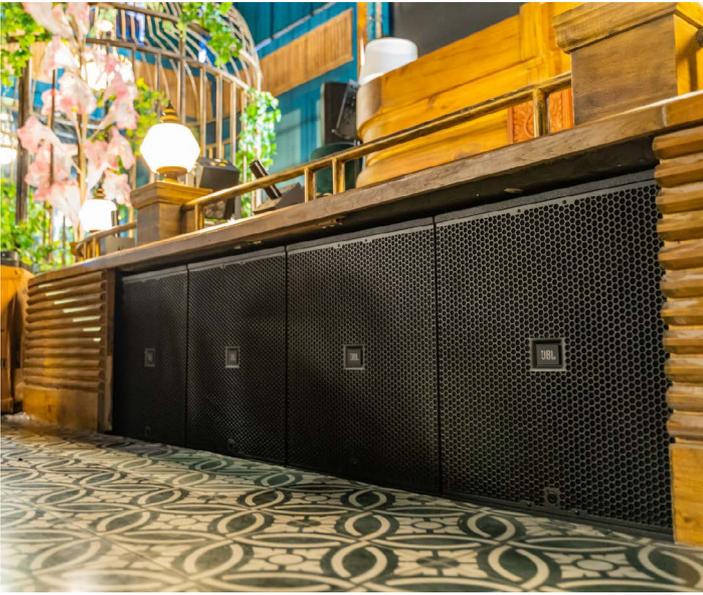


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Nano Tech Co. Ltd. Upgrades Iconic Luxury Bar with HARMAN Solutions

CAMBODIA: Bar Menaka, situated in Phnom Penh, is a popular venue for elegant parties, fashion shows, banquets, and business events. The venue emits a distinctive atmosphere while providing perfect Cambodian hospitality. It is elaborately furnished with lush jungle terraces, Khmer statues, and a lengthy Angkorian-style hallway.

To deliver captivating live music experiences for guests, Bar Menaka's management wanted to repurpose the venue's cafe into a premier bar and entertainment space featuring a world-class audio system. With live bands and DJs performing regularly, the new system needed to have tour-grade power and versatility. To meet these requests, NanoTech Co Ltd partnered with HARMAN Professional and installed a diverse range of JBL Professional, Crown and Soundcraft audio solutions.

The JBL VTX F15 multi-purpose loudspeakers provide the main stage with a full spectrum of dynamic sound. Compared to conventional loudspeakers, the JBL VTX F15 has "significantly higher output, less distortion and superior power handling". With patented D2 Dual Drivers and Differential Drive Technology, the high-performance loudspeakers "dramatically enhance all music performances at Bar Menaka".

NanoTech Co. Ltd. installed the JBL STX812M for powerful on-stage sound. Featuring a low-profile design that is only 12" above the stage, these professional monitors provide accurate sound for the performers without obstructing the audience's field of view. The waveguide ensures nominal coverage, allowing performers to hear clearly while moving around the stage.

The Crown ITech 4x3500HD amplifier delivers substantial power for the entire loudspeaker system. As the industry's first high-powered tour amplifier, the Crown ITech 4x3500HD has a powerful processing engine and a wide selection of inputs to meet the needs of any scenario. Each channel includes the acclaimed LevelMAX Limiter Suite for accurate response and smooth sound.

Bar Menaka also received the Soundcraft Si Performer digital live mixer. The Soundcraft Si Performer features four Stereo Lexicon FX processors that can be used simultaneously without affecting sound quality. In addition, the mixer's built-in DMX controller grants seamless control over the light fixtures on Bar Menaka's main stage.

A spokesperson from Bar Menaka said the transformation of the sound system has significantly improved the quality of music performances. Bar Menaka now boasts powerful sound with unrivalled clarity, which is critical as a top entertainment nightclub in Phnom Penh, Cambodia.

"Our range of industry-leading audio products ensures HARMAN delivers the best sound for versatile spaces like Bar Menaka," said Amar Subash, director, Channel Management and Audio Solutions, HARMAN Professional Solutions, APAC. "We are grateful to Nano Tech Co. Ltd. for the opportunity to collaborate on this exciting project."

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KV2 Audio Appoints Robert Adrian Tan as Director of Sales, Asia

ASIA: KV2 is thrilled to kick off the New Year with news of the appointment of a seasoned industry professional, Robert Adrian Tan, to the post of director of Sales, Asia. Based in Singapore, Tan brings over 20 years of experience as an AV consultant in the hospitality and events industries before moving into systems integration. Tan specialises in designing systems for acoustically challenging environments, be it in the live events or installed sound sector and is also a skilled business manager.

"It's an honour to be representing KV2 in the APAC region," said Tan. "I've long admired their technology and their approach to acoustics which, in my view, sets them apart from their competitors. I was introduced to the brand in 2010 and was immediately intrigued

[by] the clarity of the ES1.0 cabinets. Since then, the product range has continued to develop with more options for a wide variety of applications. I have achieved some of the best results in my career using KV2 equipment although I'm often asked to defend my choice. However, in my experience, once the client has heard a demo, all his questions are answered! I'm delighted to become part of the KV2 family and take an active part in the next chapter of their development in Asia.

"While KV2 has a certain presence in the region, I'm confident that I can continue to elevate the brand to even bigger and better things," he continued. "Opportunities don't just happen - you create them with hard work and passion - and that's exactly what I intend to do for KV2 – create opportunities."

KV2 Audio CEO, George Krampera Jr., is delighted to welcome Tan on board. "It's been over two years since the untimely passing of our friend and colleague, Dave Croxton, and we still miss him every day," said Krampera. "However, David and I had already talked about Robert, and we both felt that he would be a great fit for the KV2 family, both professionally and as a person. Covid slowed everything down of course, but once we were able to start recruiting again, Robert was an obvious choice. His knowledge of the region and his network of contacts are enormous, as are his technical and business skills. Coupled with his adaptability, enthusiasm and passion for the brand, I'm sure that Robert will be able to take KV2 to the next level in Asia."

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Max Width	3840	3840	4096	8192	10752
Max Height	2160	2160	4096	8192	8192
Input port	DVI*1 HDMI*1 VGA*1 CVBS*1 USB*1 AUDIO*1		Default ; HDMI2.0*1(+Loop) DVI1.4*4 SDI-3G*1(+Loop) Optional SDI-12G(+Loop) DP1.2(1 of 2)		
4K@60	•	•	•	•	•
HDR10/12	•	•	•	•	•
Enhanced Scaling	•	•	•	•	•
Scene Saving & Calling	•	•	•	•	•
Switch Effects	•	•	•	•	•
Multi Video Wall	•	•	•	•	•
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Multiple Control Method	•	•	•	•	•

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Audinate Broadens Access to Dante with Flexible Subscription Model

GLOBAL: Underscoring its commitment to providing scalable and secure network solutions, Audinate has released a subscription model for Dante Domain Manager, its network management solution that brings enterprise-grade system administration to the AV world.

“Dante Domain Manager has become a critical solution in the AV industry, allowing for user

authentication, role-based security and audit capabilities for Dante networks,” said Joshua Rush, chief marketing officer at Audinate. “In addition to lowering the up-front costs of acquisition, the subscription model allows buyers to treat Dante

Domain Manager as an operating expense rather than a capital expense ensuring it is even more accessible.” Available in three editions, Silver, Gold and Platinum, Dante Domain Manager can be tailored to meet user needs and budgets while maintaining the agility, scalability and security necessary to create a trusted audio network.

Dante Domain Manager Silver Edition supports 20 Dante devices in 2 Dante Domains and is meant for smaller installations such as houses of worship, recording studios and broadcast facilities. The Silver edition is available in the following editions:

- Annual subscription with ongoing support and maintenance: \$398/year
- Perpetual license including one year of support and maintenance: \$995

Dante Domain Manager Gold Edition supports 100 Dante devices in 10 Dante Domains, and caters to medium-sized installations, including schools, small

businesses, and larger houses of worship as part of a comprehensive AV management strategy. The Gold edition is available in the following editions:

- Annual subscription with ongoing support and maintenance: \$1598/year
- Perpetual license including one year of support and maintenance: \$3995

Dante Domain Manager Platinum Edition supports 250 Dante devices in 50 Dante Domains, and provides enterprise AV management for the largest mission-critical systems found in universities, stadiums, public

spaces and corporate offices. The Platinum edition is available in the following editions:

- Annual subscription with ongoing support and maintenance: \$3998/year
- Perpetual license including one year of support and maintenance: \$9995

Add-on packs are available to match the number of Dante Domains and devices required.

Audinate/Dante Subscription



NEW Upgrade

Mnano II Series

This is a huge leap in small pitch!

* COB flip tech



Ink consistency



Higher protection



Cool to the touch



8K *UHD 8K resolution*



G&D Presents KVM Technology to the Middle East with New International Location

DUBAI: German company Guntermann & Drunck GmbH (G&D) is strengthening its activities in the Middle East by establishing a new international location in Dubai. For over 35 years, the manufacturer of KVM solutions for control rooms has been serving customers in the air traffic control, industrial and process automation, defence, broadcast, oil and gas, and maritime sectors.

The new location for Near East Asia, the Middle East and Africa is located at Dubai World Trade Center. Tamby Alasker, who joined the G&D team as its director of sales in 2022, is responsible on-site. He has been working with mission-critical operations vendors in AV and KVM covering the Middle East for the past

15 years. As an expert in control room applications, he is the main local contact and advises customers and partners on individual projects.

“We want to broaden our position in the region, so establishing an office in Dubai is a logical step for us,” said CEO Roland Ollek. “With Tamby’s experience, we are confident of him strengthening our existing business relations and opening up more opportunities for G&D in this sector, creating new relationships and projects”. The company is thus pursuing its strategy of continuous growth and aims to expand its activities in further markets.

With their variety of KVM extenders, switches and matrix switches for extending, switching, and distributing keyboard, video, and mouse signals, G&D offer their users the “broadest” KVM portfolio available in the market. All devices are compatible and can be combined. “I’m looking forward to working with customers and G&D’s systems to develop solutions for modern and advanced control rooms” concluded Alasker.

G&D

INTEGRATE

MIDDLE EAST

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©Academy of Interactive Entertainment (AIE)

Brompton Technology Powers Virtual Production LED Wall at Globally Respected Film School

AUSTRALIA: With plans for an expansion later this year, AIE Film School's Canberra, Australia campus soundstage is powered by LED processing from Brompton Technology. AIE's temporarily constructed 18.5 x 3.5m stage creates a single, large volume, made up of Liantronics LED panels and powered by Brompton Technology Tessera SX40 LED processing and Tessera XD 10G data distribution units.

In 2023, AIE plans to build a new permanent film studio, AIE FILM STUDIOS, featuring a larger 30m x 30m x 15m soundstage, with an expanded 24m x 6m volume (770sqm of LED panels) powered by Brompton LED processing. It will initially be used for feature film development, and later TV production, with students undertaking Work Integrated Learning (WIL) with AIE's industry partners on the programmes.

"We have been exploring features of different LED processing options to make the right decision for our commercial and training project right here in Australia and in other countries in the future," explained Lei Guo, president – of Strategic Partnerships & Investments at AIE. "Brompton was chosen because its Tessera interface was a lot easier to use than the previous system. It also provided extensive features for managing how colour is represented on our LED displays as well as offering a wealth of in-camera-focused features like ShuttterSync that allow for finer control of how the LED displays look in camera. We were also impressed with Brompton's ongoing R&D work and incredible support throughout our journey."

Guo noted that they had even reached out to their LED panel supplier to ensure the LED screens that were supplied to AIE were all configured with Brompton LED processing. "Brompton is the 'Rolls-Royce' LED processing solution. It's easy to use, provides excellent support, and is used widely by the film industry," he added.

As well as Brompton Technology LED processing, AIE is using the only Technodolly that is permanently available in Australia for motion control, which is used for all LED volume filming, whilst Unreal Engine is deployed for visualisation software.

The AIE Film School offers the world's first two-year, full-time course integrating Virtual Production technologies into a filmmaking learning experience. The Virtual Production components of the course include pre-visualisation, virtual scouting techniques, and virtual production filming using real-time environments that provide graduates with all the necessary, in-demand industry skills.

"To get started in virtual production one must learn new techniques, and there is no better way of acquiring those skills than by doing it in real-time

and on a real-life virtual production set, working with cutting-edge technology like Liantronics LED panels and Brompton Technology processing,” explained Guo.

AIE is “the only film school in Australia that funds and creates commercial feature films for global distribution”. AIE recently worked with its production partner DEMS Entertainment on the theatrically released feature film “Sissy”, which was nominated for three Australian Academy of Cinema and Television Arts Awards, known as the AACTA Awards.

“It’s great to see globally respected educational organisations like AIE Film School integrating Virtual Production technologies into their filmmaking courses.

This shows students that this new technology is nothing to be frightened of. In fact, it can actually become a great new avenue for careers in film production,” concluded Luke Hurford, regional technical manager of Asia Pacific at Brompton Technology.

We are delighted that the AIE team have chosen Brompton LED processing for their current and upcoming VP facilities. Having fully functional virtual production environments is something that is going to really help students nurture their professional skills and kickstart their careers in film production!”

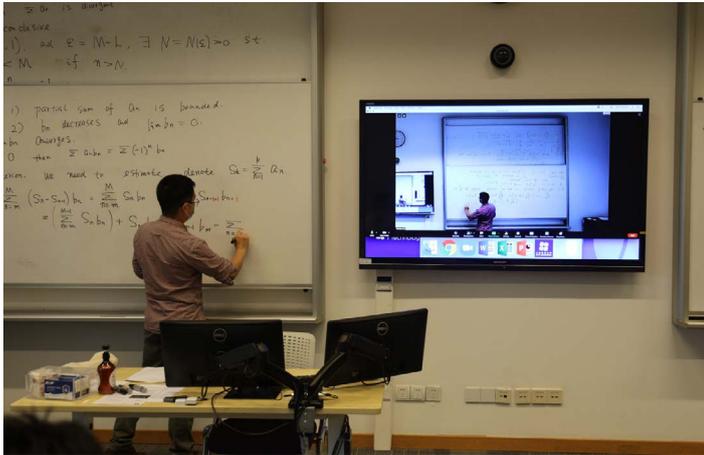
Brompton Technology

NovaStar 8K Pixel to Pixel Display Solution



✉ aseo@novastar.tech





Dante-Enabled Equipment Chosen to Improve Sound Quality at Shanghai NYU

CHINA: Located in China's most populated urban area, Shanghai New York University (NYU) is China's first Sino-US research university. Founded in 2012 by NYU and East China Normal University with the support of the city of Shanghai and the district of Pudong, the University offers 19 majors and teaches entirely in English. One of three universities in the NYU Global Network, NYU Shanghai chose Audinate's Dante audio network platform managed by Dante Domain Manager software to deliver upon its mission to offer outstanding teaching, research and public service.

At the start of 2020, the pandemic forced educational leaders around the world to transition from in-person to remote learning, including the administration at NYU Shanghai. This presented many challenges for the University leaders and its almost 2000 students, including improving the audio setup in 57 lecture hall-style classrooms. Each of the classrooms had existing

loudspeakers to reinforce the sound for in-person attendees, but it lacked the proper audio equipment to capture sound and broadcast it to remote learners. The University tasked a project team consisting of members of the IT and instructed them to create an audio system capable of delivering high-quality performance.

The project team had several key criteria when choosing its new audio network system. First, it needed to ensure the upgrade fit within a required budget. Next, they wanted to select products from reputable vendors and brands that would provide the support they needed. Finally, reliability was critical as the system needed to last 5-7 years. When the team began researching equipment, it met with several representatives from different audio component hardware manufacturers and one brand consistently received endorsement in conversations as the choice for audio networking distribution – Dante.

Sunny Qi, senior IT helpdesk manager, was one member of the University's project team tasked with evaluating Dante. When the team received proposals from different manufacturers, they were apprehensive about making a change given their comfort level and experience with the existing, traditional point-to-point system. "Our team was not as familiar with Dante as we had experience mostly with analogue connections," said Qi. "When we determined our solutions required for hybrid teaching, it became clear Dante was the best choice for our campus."

The University chose Dante-enabled equipment to improve the sound quality within the lecture rooms. Qi and her project team selected Dante-enabled Digital Signal Processors (DSP) from Extron for audio processing. The Extron DSPs also provide the ability to add high-quality effects including voice recognition, noise cancellation and surround sound capabilities.



The Dante platform is a complete AV-over-IP solution that allows audio, video, and control data to be transported over standard 1Gb Ethernet networks. Supported in more than 3,500 Dante-enabled products from more than 500 manufacturers, Dante replaces point-to-point analogue and digital connections with software-based IP routing, allowing users to send AV channels anywhere on the network with perfect digital fidelity.

The team also selected Dante-enabled Shure ULXD4D Dual Channel Digital Wireless Receivers with lapel microphones and later added Dante-enabled ceiling microphone arrays from Shure and Sennheiser to provide better audio coverage and consistent sound during lectures.

Using Dante-enabled products, the team could connect different hardware brands with the latest products using standard Ethernet cables. This allowed them to directly integrate the products into their existing data network.

One other important factor for the team was selecting manufacturers with a solid track record of customer service. The presence of an Audinate customer service team based in China gave them added confidence in

their choice. “The local Dante customer service team has been very responsive, and we are pleased with their support,” added Qi.

With numerous Dante products on the network, the University IT teams also use Dante Domain Manager, a server-based software solution that provides a centralized view of the entire deployment. The software allows the team to divide the system into groups to manage broadcast traffic more efficiently on the computer network and improve maintenance efficiency. Through a centralized view, the team receives alerts when issues arise in the system. Then, they can access the system from anywhere, determine the problem and solve it remotely.

“The Dante Domain Manager user interface is very straightforward, and has been simple for us to use,” said Qi. “With the ability to see all the devices at once on the network, it’s easier for us to monitor and manage our systems. Being able to access the network remotely also allows us to work more efficiently and keep our classrooms operating smoothly.”

Today, the NYU Shanghai project team is now both more familiar and comfortable with Dante serving as the backbone for their audio network. As new audio needs arise, the University will “continue to look to Dante-enabled products to provide flexible, scalable networked audio and video.”

Audinate/Dante



Zytronic Touch Sensors Transform Ancient Manuscripts into Digital Books

SOUTH KOREA: The South Korean Ministry of Culture, Sports, and Tourism has been working on creating a foundation to make significant cultural artefacts more accessible to the general public since 2019. As a result of this project, the “real sense library” was created. It is an exhibition area within the National Library of Korea that makes use of cutting-edge and captivating technology to provide people access to rare treasures like old manuscripts that are often stored safely under lock and key.

Making such important pieces accessible to the public, historians and researchers whilst safely showing them proved a challenge. To address this, Seoul-

based smart services consultant, Ubidus, was brought on board to design and build a series of engaging, interactive exhibits allowing users to experience the library’s content digitally but in a uniquely immersive way.

Following a detailed analysis of the requirements, the company came up with several concepts. Having previously worked successfully with Zytronic’s long-standing Korean partner, Dream Team Harmony (DTH), Ubidus immediately turned to them for advice for two of the exhibits called the ‘Digital Book’ and ‘The Future of Search’.

“Many companies have developed digital books using LCDs over the years, but we wanted to create something more realistic,” said Baek Jin Su, Ubidus’ team manager. “Our idea was to leverage a real large-scale book whereby users could physically turn the pages to view content, as well as interact with the text to generate related animations. For ‘The Future of

Search' concept is an interactive table; we wanted to provide users with a more immersive and interactive method for researching the library's old documents beyond what we usually see on a computer screen."

Both imaginative concepts were realised using digital projection mapping and Zytronic's contactless 'hover' touch sensing technology. Operating in conjunction with Zytronic's ZXY500 projected capacitive controller, the solution boosts touch detection levels far beyond what is usually possible, enabling a level of sensitivity significantly greater than conventional projected capacitive systems. For instance, through the air, touch detection can be picked up at least 50mm away from the surface of the sensor, and crucially for this application, it also registers interaction through non-conductive materials, such as paper, wood, plastic, and ceramics.

Beneath the pages of the "Digital Book" and the surface of "The Future of Search" marble tables, DTH proposed bespoke ZyFilm touch sensors. "Because the Zytronic sensor has a flexible film structure, it can be easily installed under the pages and tabletop and coupled with their ZXY500™ controller is highly resilient against any external noise – put simply, it works!" said Baek Jin Su.

By turning the pages of the "Digital Book", users can read the original texts and interpretations of Dongui Bogam, the ancient Korean medical encyclopaedia, in a unique way. Dongui Bogam was compiled by the royal physician Heo Jun, first published in 1613 and circulated throughout Korea and China. In this latest imagining, users can interact with each page using the super sensitive Zytronic touch sensor mounted beneath with a high-resolution overhead projector

above, adding animation effects and bringing each "Digital Book" to life.

Furthermore, in the library's reading room, "The Future of Search" interactive marble tables have been designed and manufactured to deliver an innovative way to access digitised content. Visitors and scholars alike can visually and dynamically search library materials, share search results, or collaborate with research colleagues. Like the "Digital Book", Zytronic's 'hover' touch recognition technology works through the dense, non-conductive rock tables, enabling several users to interact with the overhead projected content simultaneously.

"It's only Zytronic's special ZXY500 controller and its proprietary 'hover' firmware combined with the flexible touch sensor that can reliably detect touches through thick, non-conductive materials, enabling us to create the desired design that I had only thought of as an idea," concluded Baek Jin Su.

"The innovative technology proved to be the ideal solution to deliver a fully immersive user experience that gives very fast response and excellent touch accuracy. The dedicated technical support and application guidance from their local partners DTH, were also compelling reasons for choosing Zytronic."

Zytronic/Multi-Projected Capacitive Touch



Pulse and PRO LAB Specify Full Martin Audio System for 75,000 sqft Gym

UAE: A Martin Audio sound reinforcement system has been installed at the new Wellfit gym, billed as Dubai's largest indoor health and fitness club, which offers top-notch amenities over its 75,000 square feet. Nestled in Jumeirah Village Circle (JVC), Wellfit showcases more than 200 loudspeakers from the British manufacturer.

It is the second state-of-the-art sports, health, and fitness centre in the UAE opened by operators Arada, following the successful community pilot in Sharjah last year. The sound is broadcast through the main activity zones via Martin Audio's popular CDD series. These coaxial differential dispersion loudspeakers were installed by local partners, PRO

LAB, to a specification by Pulse Middle East, who was responsible for the design and build of the venue. They form part of a full audio, visual, lighting, and content management solution provided by the integrators. PRO LAB has a long history of supplying Martin Audio systems and in particular, the CDD, which offers both even coverage and performance. "It was the coverage pattern in particular that drew us to CDD," said PRO LAB managing director, Rami Haber.

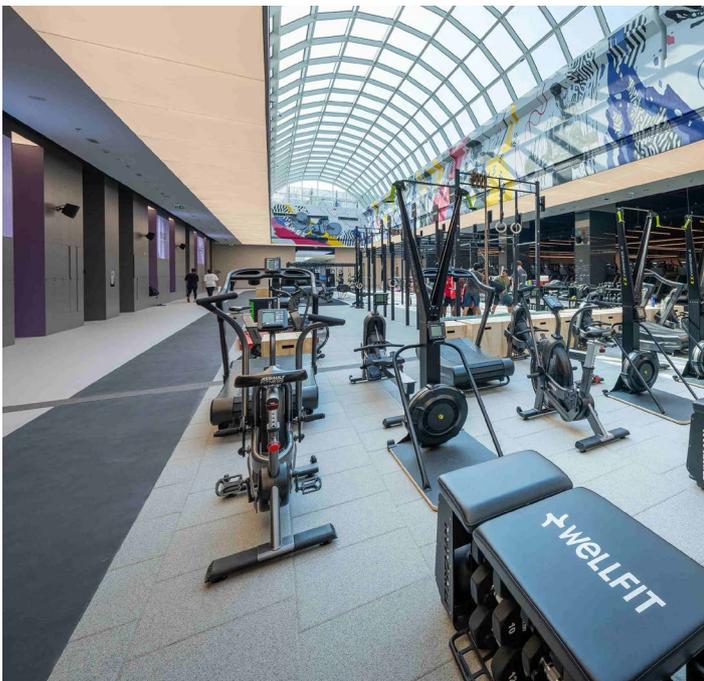
Since a differential dispersion horn has a trapezoidal dispersion pattern in both vertical and horizontal planes the specified area can be covered with sound more evenly than a system with a conventional, fixed-dispersion type horn. Distributed throughout the vast space are 6 x CDD10 and 50 x CDD8, with low frequencies handled by 14 x SX210 and 4 x SX212 subwoofers.

In addition, PRO LAB and Pulse have specified Martin Audio Blackline, detailing 20 x Blackline X10, 32 x X8B, a pair of Blackline X12B, and 18 x X115B subwoofers. These are situated in the corners of the main studio.



In the ancillary retail and leisure areas, they have added a combination of 15 x ACS-55T 5.25" passive two-way ceiling speakers, 20 x ACP-55TB compact pendant ceiling speakers, and 19 x ACS 40TS 4" ultra-compact ceiling speakers—all part of Martin Audio's ADORN series.

The loudspeakers also needed to show their versatility since they take feeds from a variety of sources including PIXILAB which controls all audio, visual, lighting (including architectural) and content, as well as computer-delivered background music, Audix mics, and other AV sources (HDMI TX and RX).



The sound reinforcement system has met the approval of all concerned. PRO LAB CEO Rami Haber concluded, "After working with many premier speaker systems previously in other gyms the client was very happy with the coverage, performance, and quality provided by Martin Audio and Pulse."

Martin Audio



Credit: © Jay Jeong

grandMA3 Guides the Light for Good Shepherd Church

SOUTH KOREA : The Good Shepherd Church in Seongnam, Korea is a busy, active, and dynamic environment running a raft of regular daily, weekly, and monthly performance-based worship services, praise gatherings plus other related shows and events. It is right at the heart of its local community and is a constant fundraiser for assorted humanitarian causes, both local and international.

In 2022, the Church made its first MA Lighting console purchase, when a new grandMA3 onPC command wing joined the production technology in the 500-capacity multipurpose Glory Hall. This was

supplied by MA Lighting's Korean distributor, Hansam System, together with a package of new luminaires.

The new grandMA3 onPC command wing is now installed in the Glory Hall, located on the sixth floor of the expansive Seongnam campus. This particular venue has a lively focus on youth programs.

Good Shepherd has always believed in investing in quality production technology, and technical manager Jin-woo Yoo explained that when they sought a full lighting solution for The Glory Hall, a powerful, stable, future proof and easy-to-use control platform was essential. They wanted a console that offered the flexibility of being able to create, modify and update lighting cues extremely fast to keep pace with the events staged in the Glory Hall.

The grandMA3 onPC command wing was proposed by the Hansam Systems team led by sales manager

Chang-gon Kim, together with 8 x Martin ERA 600 moving lights, 24 x ELP WW ellipsoidal and 9 x Rush PAR2s, also from Martin, as well as 14 x Elation fresnel spots and 37 DMX controlled house lights, all running through the new console.

A typical Glory Hall praise gathering might feature a service in the morning finishing around 11.30, with a performance starting at 2 p.m. followed by another one at 6 p.m., so the lighting team must work super quickly and be imaginative and original in how they are using the lights.

“With such a short prep time, we needed a platform and a philosophy that allowed the lighting team to work fast and create great results under pressure,” Jin Woo-Yoo commented.

He and the lighting team considered several different options, before deciding on grandMA3 but it was the whole grandMA3 system, its scope and adaptability that really impressed them the most.

“The real-time 3D Visualizer feature is a fantastic tool for showing the important functions and effects of the luminaires intuitively,” he stated, adding that using the console is so quick and easy that as soon as he thinks about which lights to move and where to ... it’s done!

Using Selection Grid enhances the ability to produce a design quickly and dramatically improves the efficiency of the design process by reducing unnecessary time.

While effects lighting is not used so much during more standard church services, with Glory Hall being multipurpose and more performance-driven, this grandMA3 system was a perfect choice.

Hansam System arranged training sessions for Good Shepherd’s lighting department and Jin Woo-Yoo noted that while the console is hugely feature-rich, and they are still drilling down into its fuller capabilities, it has still been substantially easier to learn than their previous console! (from another brand!)

Talking more generally about MA Lighting, Jin Woo-Yoo stated that they all think it is an excellent brand that listens to end-user feedback and needs and produces software and hardware to encourage creativity. They think it was a smart move to include straightforward visualization as this is a great tool for assisting team discussions related to which elements of the lighting rig are appropriate and will work for specific performance requirements.

Furthermore, he underlines the importance of a good relationship with the local distributor, not just for product support and service, but also to be kept in the loop of a constantly changing and innovating technical environment.

Chang-gon Kim commented that the grandMA3 onPC command wing is the ultimate mobile solution for grandMA3 users and fans and, “THE most versatile PC setup you can find on the market right now! For venues of this size, experiencing the incredible potential and flexibility of MA via the grandMA3 onPC command wing is every bit as wonderful as it sounds!” he concluded.

MA Lighting



Kingdomcity's RED Cameras Enhance Visual Storytelling Experience

MALAYSIA/AUSTRALIA: Kingdomcity is a global organisation led by Mark Varughese. It was founded in April 2006 in Kuala Lumpur and is now in over 30 locations worldwide with a congregation of more than 30,000 people.

Kingdomcity's vision is to connect, equip and empower people to bring the reality of God to their world. One way of transmitting the message is to produce videos that engage and revitalise their congregation. When COVID-19 hit, it became apparent that more needed to be done as physical interactions were limited. The media team highlights, "During COVID, we started to shoot more content for our Kids' curriculum, Online services and special items. As a thriving church that aims to push the boundaries of visual storytelling, we decided to go with RED digital cameras because of the image quality and how easy it was to work with the codec. We do minimal colouring and processing

on our footage. Most times, what the audience sees is what we air out of the camera in Rec709, due to our quick turnaround for our projects. The sensor simply delivers amazing imagery."

Kingdomcity purchased eight units of **RED GEMINI** and six units of **RED KOMODOS** for their set-up in Kuala Lumpur, Malaysia and Perth, Australia. The units were purchased from distributor AV8 Media Pte Ltd in Singapore and the corresponding RED distributor in Australia. "We wanted to match the quality that we were producing in both our studios in Malaysia and Perth, and thus the decision to equip both with the same units and models from RED after researching for months."

The media team is very pleased with its decision to purchase the RED digital cameras. "For the Gemini(s), the lowlight sensor has been great for our live-stream events. And the RED Komodo(s) are brilliant cameras for handheld due to their small form factor. The camera's dynamic range and colour science is the main reason we use REDs. The big resolution also helps us capture quality content for our big LEDs installed in our sanctuaries."

The media team further elaborates, "RED digital cameras are workhorses. We have run our cameras with full-day shoots and have had no issues with cameras going down in our studio environment. One would think R3D Raw footages are big files, but it's relatively smaller than ProRes. The only reason it would seem bigger would be the higher resolution we tend to shoot with the cameras - 5k HD or 6k HD in R3D Raw."

The final video's high quality, resolution and colour brilliance is undeniable. But more than that, the RED digital cameras offer ease of use, reliability and quick turnarounds that has helped Kingdomcity produce more visual stories to maintain engagement and spread its message.

Kingdomcity

AV8 Media



Riedel Appoints Abdul Hadi to Serve as Regional Sales Manager

MIDDLE EAST: Moving to further strengthen its presence and support capabilities in the Middle East, Riedel Communications has appointed Abdul Hadi to serve as its regional sales manager, with a focus on Qatar and the Kingdom of Saudi Arabia. Abdul Hadi will manage key accounts for Riedel in the install sector and help the company to continue building its footprint in the AV market and other verticals.

"Abdul Hadi has both the skills and experience to address the needs of clients across multiple

verticals," said Ahmed Magd el din Abdalla, Riedel Communications regional sales director, Middle East. "He has a strong record of meeting growth targets and has been part of high-profile technical projects in the region. We're pleased to welcome him to the Riedel team."

Before joining Riedel, Abdul Hadi was with NMK Electronics Trading for nearly a decade, first as brand manager for the Dubai-based company's business communication unit and then as a key account manager. Earlier roles included sales engineer for telecom services at EMS and trainee engineer at Mobilink GSM. Abdul Hadi holds a Bachelor of Science degree in electrical engineering (telecommunications engineering) from the Center of Advance Studies in Engineering.

"I have always been passionate about implementing new technologies to address the needs of the client, and I look forward to connecting clients across the Middle East with Riedel solutions and the benefits they deliver in broadcast, AV, and beyond," said Abdul Hadi.

Abdul Hadi will be based in Dubai and report directly to Ahmed Magd el din Abdalla.

Riedel Communications

Major Software Update for Analog Way Midra 4K Range of Presentation Switchers



Ideally tailored to small/medium-sized fixed installations and live event spaces, the Midra 4K series offers “the highest reliability, the lowest latency, unrivalled ease of use, optimal image quality and state-of-the-art live 4K processing features”. The range includes four products: QuickVu 4K, QuickMatrix 4K, Pulse 4K and Eikos 4K.

The new version 3.0 significantly improves the live streaming performance of Midra 4K presentation switchers, now enabling full HD quality live streaming at 30Hz, providing much better image quality and customer experience during hybrid events.

A significant improvement in version 3.0 is the support of High Dynamic Range (HDR) and Wide Color Gamut (WCG) workflows for even more impressive live presentations. Without requiring any external converters, it also brings the ability to convert SDR to HDR, HDR to SDR, or even HDR to HDR for dynamic range and wide colour gamut needs.

With version 3.0, Midra 4K presentation switchers now feature a new video processing architecture based on 3D Lookup Tables (LUTs) allowing for advanced colour space and dynamic range conversions as well as custom colour correction. Once updated, Midra 4K switchers contain predefined 3D LUTs for all automatic colour adjustments and transformations. In addition, it is possible to import and apply custom 3D LUTs from other vendors or those generated by specific third-party tools for fully tailored colour management.

Click the link below to download version 3.0.

[Analog Way/Midra 4K V3.0](#)

Draper Adds 21:9 Format Screen Sizes



The introduction of Front Row in Microsoft Teams Rooms (TMR) is bringing new life to the 21:9 screen format. This layout features the video gallery displayed horizontally below the main content, allowing for a more natural eye-level experience for attendees. While it can work with 16:9 monitors, 21:9 gives users the full Front Row experience.

To meet the growing demand Draper has announced several new standard screen sizes with a 21:9 aspect ratio. They are available on Acumen V, Acumen V XL, Access V, Access XL V, Ultimate Access V, Ultimate Access XL V, Premier, and Premier XL electric screens. They have also been added to the Profile Plus framed screen.

According to Steve Cook, Consultant Relations Manager for Draper, 21:9 can provide more immersive

experiences in considerably bigger proportions. 21:9 screens' 2160 vertical resolution is more than WUXGA or High Definition 1080p projectors. Draper can manufacture any size and format of electric or fixed frame screen. While the company makes every screen to order, popular standard sizes are also available.

A [free white paper PDF](#) is available for download on the subject of 21:9 screen formats.

Draper

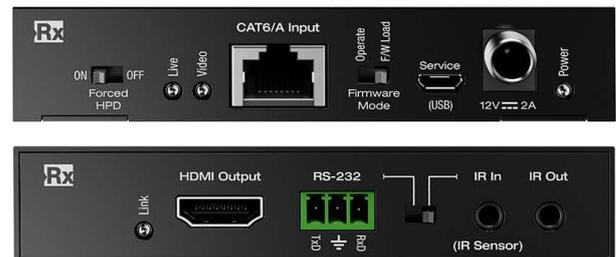
Key Digital Updates Single-Gang Wall Box Switcher-Extender/Transmitter Solution



Key Digital has updated its single-gang wall box switcher-extender/transmitter solution with the introduction of the KD-XWPS 4K UHD, power-over-CAT, HDMI/USB-C auto-switching switcher/transmitter plus receiver kit.

With the new KD-XWPS, Key Digital bundled the updated KD-EXWPSTx-2 with their KD-X444SPRx receiver as a packaged kit. The switcher/transmitter is PoC-powered from the receiver for simple installation and the IR sensor is built into the front panel thus a single CAT run is all that's needed.

The enhanced KD-EXWPSTx-2 single-gang wall- or desktop-box-mounted switcher/transmitter can extend a 4K/18G signal up to 50 m/ 164 ft, along with relaying IR remote signals captured by the integrated IR sensor for retransmitting via the KD-X444SPRx receiver to control remotely located displays and other equipment. A single front panel button allows KD-XWPS users to select between the switchers' front



panel HDMI and USB-C inputs. Or, when auto-switching is enabled, newly detected sources are automatically selected, and newly disconnected sources are switched away from.

The KD-XWPS kit handles a host of protocols and interfaces, including fully licensed HDCP 2.2, 18 Gbps bandwidth support, TMDS re-clocking and signal regeneration, EDID handshake and management, and deep colour support up to 4K/UHD 30Hz 4:4:4/12 bit or 60Hz 4:2:2/12 bit, with support for DTS and Dolby surround audio up to and including 6.1 streams.

The KD-XWPS kit, available at an MSRP of USD 425, has been developed for professional AV systems installations including conference rooms, huddle spaces and classrooms.

Key Digital/KD-XWPS

Xilica Follow Me Module Enhances Speaker Tracking with Sennheiser Beamforming Technology



Xilica continues to collaborate with its partners at Sennheiser to bring physical and remote workers and learners closer together. The Xilica Follow Me automated camera-tracking module makes it easy for remote participants to engage with conference room participants from remote locations thanks to intelligent software that identifies each new voice and follows with immediate and precise camera movements to track each speaker.

The Xilica Follow Me camera-tracking module now uses the virtual beam location of a Sennheiser TeamConnect Ceiling 2 (TCC2) microphone to automatically steer the camera to a seating position in a conference room. Remote meeting participants can then visually track the conversation based on who is speaking at the physical location.

Integrators and tech managers can quickly configure the module using Xilica Designer software by setting specific camera positions based on the Sennheiser TCC2's beam angle and selecting the appropriate room size and layout. The setup process also provides quality checks for audio presence and intelligibility through simple live metering. Focusing the camera on various sitting positions is straightforward by using the PTZ settings in the Xilica Follow Me module. From there, users can save preset numbers with the relevant seats and turn on Follow Me functionality.

This is the next stage of Xilica and Sennheiser's joint efforts to modernise collaboration rooms' infrastructure and streamline technology while ensuring that in-person and remote guests are equal participants.

[Xilica/Room Kits](#)

ClearOne UNITE 260 Pro Camera Features 20X optical zoom and 16X digital zoom

The new ClearOne UNITE 260 Pro Camera is the latest addition to a growing line of professional UNITE Cameras offered by ClearOne to meet a wide range of applications and environments. UNITE 260 Pro is a professional grade 4K Ultra HD camera which features both a 20X optical zoom and 16X digital zoom that allows users to capture every participant in all meeting, training, and learning environments it is deployed.

The new camera features an AI-based smart face-tracking mode that keeps a selected presenter in the frame as they move about the room. Alternatively, the camera's AI-based auto-framing mode always keeps an entire group in perfect view. With dual video outputs HDMI and IP, the UNITE 260 Pro Camera is an excellent choice for a hybrid environment: streaming content while simultaneously showing it live where the presentation is occurring.



The camera's advanced algorithms enable the lens to focus quickly and accurately. Camera functions can be controlled by USB, Ethernet, RS-485, and RS-232, providing users with maximum flexibility in usage.

A high SNR CMOS sensor combined with 2D, and 3D noise reduction algorithms deliver a clean image — even under low light conditions. Compatible with all popular meeting applications like Microsoft Teams, Zoom, WebEx, and Google Meet, the UNITE 260 Pro supports USB 3.0 and 2.0 interfaces, and the USB interface supports YUY2, MJPEG, and H.264 video formats. It streams AV over IP using H.264 and H.265 video compression and can be powered by PoE, or 12V DC power sources.

[ClearOne/UNITE 260 Pro Camera](#)

BrightSign Extends Series 5 Player Family with New Affordable Models

BrightSign has added two models to its new generation of Series 5 players, making the features, performance and functionality offered by its latest technology accessible to a much wider range of digital signage applications.

The new 4K BrightSign HD5 is a great, affordable, versatile player offering the features and functionality needed for a broad range of digital

signage projects. The standard model has gigabit ethernet, GPIO, optional WiFi, and IR ports, while the extended I/O version adds USB and serial ports for added interactive functionality. This player is cased in a thin aluminium enclosure that dissipates heat, eliminating the need for a fan and helping the player operate silently.



BrightSign is also announcing the entry-level LS5, a low-cost solution available with HD and 4K resolution. The LS5 displays video, HTML and graphics over HDMI and outputs audio over a 3.5mm digital/analog port. The LS5 is ideal for basic digital signage projects or customers who simply want to get familiar with the BrightSign platform.

The new players will be available alongside BrightSign's XC5 players, announced in 2022, which are now shipping. The XC2055 and XC4055 media players offer the company's most powerful HTML5/graphics engine to date, with graphics performance improvement of up to 10X compared to their predecessors. Both XC5 models support 8K output – one model offering dual HDMI-out (up to two 4K or one 8K) and the other offering quad HDMI-out (up to four 4K or one 8K).

The XD235 and XD1035, shipping this spring, have been carefully engineered to deliver inspiring 4K experiences for any enterprise-level digital application. The players' upgraded 4K HTML engine is optimized for responsive interactivity and display of real-time dashboards through significant upgrades to HTML rendering, motion graphics and JavaScript performance. The dynamic mosaic mode adds flexibility to the authoring and playback experience.

All of BrightSign's Series 5 media players feature BrightSign OS9, the company's proprietary operating system, purpose-built for digital signage. BrightSign OS9 uses modern web-based technology to cloud-connect all BrightSign players, delivering real-time access and control at no additional charge. BrightSign continually offers updates for all products within its digital signage ecosystem for unrivalled reliability, the latest services, and new leading-edge features to ensure customers are never stuck with a product that isn't keeping pace with current market demands.

The HD5 and the LS5 will be available globally this spring.

BrightSign

Intricon: Making Sound Alive with Passion



The Intricon Asia Ops team (L-R): Yap Woei Sing, product development manager; Jinfu Chen, sales manager; Winson Chan, managing director and Robert Soo, technical consultant.

Right here in our backyard is a company producing critical components for many renowned audio brands, but if you ask most in the industry who is Intricon – you will likely get a blank stare!

Intricon HQ, based in the USA, celebrated its 45th anniversary, whilst Intricon Asia, located in Singapore, celebrated its 36th anniversary in 2022. In brief, Intricon manufactures high-end medical products and professional audio devices. Intricon Asia has a complete office that includes Design, R&D, a manufacturing space in Singapore and a factory in Batam, Indonesia. The Singapore office, with a

current headcount of 160, was established in 1986 and the Batam factory, with a headcount of 120, in 2011. The Singapore office occupies 45,000 sqft of space, with three-quarters dedicated to manufacturing and warehouse. The Batam manufacturing plant recently moved to a 30,000 sqft space where it mainly manufactures Hearing Aid and Professional Audio devices.

In 2018, Intricon crossed the USD100 million mark in revenue and in May of 2022, Intricon was de-listed and became a privately owned company. “This has offered more flexibility and further drive for the company, and



Intricon Asia manufacturing facility.

we believe we will be able to achieve more milestones as we move forward,” said Winson Chan, managing director of Intricon Asia.

Intricon Asia is the main site that directly designs, develops, and manufactures “Professional Audio Devices and Accessories” (PADA) products, providing innovative and highly effective communications solutions in demanding situations. The solutions manufactured include Headworn, Headset, Lavalier, Boom Microphone, Microphone Capsule & Module, and Customised Products and Accessories. Applications for the solutions are wide: Performing Arts, Houses of Worship, Video/Film production, video conferencing, fitness training, production intercom, security, aviation(pilot) and most recently, E-gaming.

Winson highlights that one of the company’s fundamental values is its unique competency and ability to customise solutions according to client requirements. “We have a few major Singapore government contracts where customisation of head-

worn microphones to helmets is needed, and we can manufacture it according to the specifications given to us. Our clients feel that this is a value add that is indispensable.”

Robert Soo, an AV and Acoustics consultant, used to work in Intricon Asia early in his career before setting up Cogent Acoustics in 2011. In 2021, the company again engaged Robert as a technical consultant to provide insights on product development and strategic marketing.

Robert comments, “We are proud that we can still do an injection mould over a microphone capsule. It is precision engineering and not an easy technique. Not many manufacturers can achieve this. The process gives the microphone capsule added ruggedness and reliability. Our boom microphones are rock solid.”

The COVID-19 Years

Almost every industry was hit with COVID-19 measures. Intricon Asia was no different.

According to Winson, security-related clients have been stable as there is a predictable cycle. “We have been able to keep our head above water due to our regular customers. We have also been blessed to have good staff retention, so there was not too much challenge. In fact, during COVID restrictions, we found accommodation in Singapore for our Malaysian staff, which gave them peace of mind.”

Intricon Asia did not sit on its laurels over the last two to three years. “We refreshed some of our older products with newer features to meet new demands. We also introduced our own branded E-gaming headset,” as shared by Winson, with a strong sense of pride.

The E-gaming Headset

Winson mentions on that a business development core team was set up to seek opportunities beyond their traditional business. The E-gaming headset came out from that initiative. The first headset was introduced in November 2021.

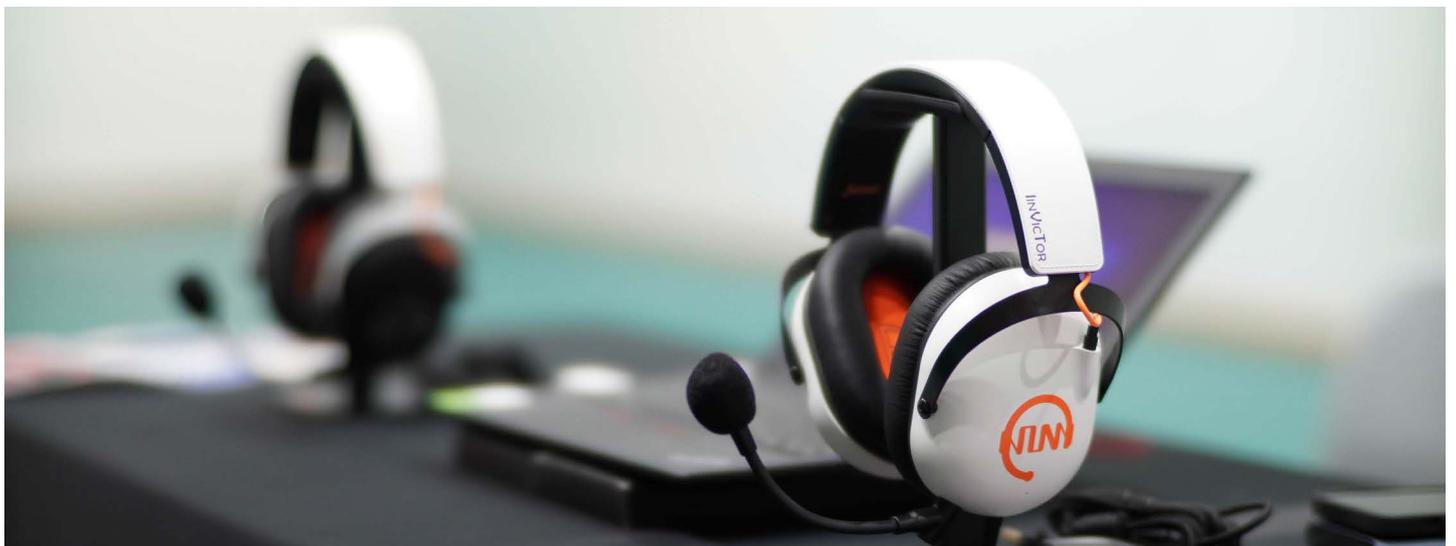
Robert adds, “Since we have decades of experience and technical expertise in acoustic communications,

why not we use it to produce high quality consumer products at an affordable price? So, we did, and because they sounded great, it wasn’t just used for e-gaming but for video conferencing and home-based learning as well. In fact, I know a professional who even used it for his video editing work.”

“It has been a great learning experience. We have had encouraging feedback about the quality of the acoustics,” said Winson. This should not be surprising as the company has over 35 years of experience in manufacturing audio solutions. “Though we have come into the field quite late, our product quality is second to none.”

Targeted at the growing gaming community, the gaming headset is marketed under the company’s brand – IINVICTOR. The Soturi (which means ‘Warrior’ in Finnish) is IINVICTOR’s first gaming headset, offering a superb audio experience and comfort at affordable pricing.

The superior sound of the Soturi is created by Audiophile Standard 50mm drivers, providing premium audio in the range of 20Hz to 20kHz. The drivers are specially tuned to provide Spatial Awareness, an



IINVICTOR E-Gaming headset (White Soturi & Black Soturi+).

immersive audio experience to let you hear objects with pinpoint accuracy. Together with Comfort-Lite for high comfortable all-day wear, the Soturi is the ideal headset for Gaming, Podcasting, Remote Teaching and Video Conferencing.

Since the launch, the company has been busy promoting the brand. Jin Fu, an experienced audio sales professional who had worked in Audio-Technica, Yamaha and Diety microphones, was recruited to drive the business for the company as regional sales manager. With his involvement, the company has already appointed distributors for the IINVICTOR headsets in Cambodia, Indonesia, Japan, Malaysia, Taiwan and Singapore.



The signing of Rebels Squad as IINVICTOR brand ambassador.

“We also engaged two E-sports teams to be our brand ambassadors. Rebels Squad has around 40,000 followers; the other is Almghty, a top e-sports team in Asia. Beyond that, we are looking to partner with complementary solutions. We found that Podcasters are also very interested in our solution, and we will continue to market the brand so that it becomes a household name within the E-sports fraternity because of the quality we offer,” said Jin Fu.

Winson highlights that the effort has been rewarding. “We are only one year young and have accomplished quite a bit and met our expectations.”

Winson also adds that Intricon HQ is pleased with the effort and the solutions from Intricon Asia. “We hope that with HQ endorsement and support, we will be able to open up more doors outside Asia for our E-gaming headset. We have also started working on our next generation of products based on feedback gathered from the E-sports community.”



A gamer using IINVICTOR Soturi at one of the competitions sponsored by Intricon.

Moving Forward

Winson adds that other than working on the next generation of gaming headsets, the company is looking into a new category of products.



The Batam manufacturing plant.

“We are looking into migrating some of our medical and pro-audio products to consumer lifestyle products like wearables. For example, our professional in-ear products can be transformed into an in-ear solution to help those who snore, sleep better. There are a few other ideas that we are mulling at the moment.”

Winson also highlights that the Food and Drug Administration (FDA) of the USA has approved hearing aids to be sold over the counter (OTC). “Before this approval, it was expensive for the public in the USA to buy hearing aids. They needed to consult an audiologist and could only get hearing aids from specific medical shops. However, this new approval will help reduce hearing aid prices as demand picks up. This is one reason we moved to a bigger plant in Batam to help us cope with the expected demand.”

Intricon?

Hopefully, the next time someone mentions Intricon, our readers will have a better idea of this company providing precision audio technology to critical sectors such as professional audio, medical, security and aviation. On the other hand, their E-gaming headset brand IINVICTOR should soon become a household name. Do not be surprised that in the coming months, we may be hearing more about this company that has been a hidden gem in Singapore for the past 36 years.

Intricon Asia

IINVICTOR

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- Awards



Metaverse, IoT, Pro AV ... And All That Binds Them

Peeking into the intricate world of the Metaverse and the Internet of Things (IoT); and the relationship they share with Professional AV

by Elton Noronha



A lot has changed over the course of the past decade, with the year 2020 proving to be the catalyst of rapid transformations – not just in the way we work or how we consume content, but in practically every sphere of human life. The world has veered to the digital space in a big way – from e-commerce now being a permanent fixture in everyday commercial transactions, to hybrid work environments allowing for collaborations between teams of experts from different geographical locations; and much more.

Over the past three years or so, platforms like Zoom, Microsoft Teams, Google Meet etc have witnessed a tremendous boost in usage; and have now become a sort of functional mainstay within various sectors such as corporate, education, healthcare, and more. Several companies, educational institutes, and healthcare establishments have been noted to redesign their previously existing conferencing infrastructure and training room facilities to now include state-of-the-art technologies like LED walls, leading edge audio systems and a slew of automation systems that can fulfil tasks ranging from room booking, to attendance

monitoring, to presentation management to comprehensive systems monitoring and much more – all of course, integrated with communication platforms like Zoom or Microsoft Teams etc.

At the same time, such platforms have also played host to a wide variety of virtual events – ranging from corporate award ceremonies, to large scale webinars, to even private events like weddings etc; and of course, web concerts – where audiences had the opportunities to witness their favourite musicians and artists perform in real-time. And while the efficacy of such an ecosystem cannot be denied or negated; there have been certain key learnings that cannot be overlooked. Among these learnings, perhaps the most crucial one has been that of users feeling ‘disconnected’ and ‘removed’ from whatever’s going on within the virtual event.

It is true that platforms like Zoom or Teams etc allow participants to interact in a plethora of verbal and non-verbal ways. That being said though, many people have noted a strong feeling of disconnection as they’ve cited the experience to be more like an extension of viewing a television; especially once the initial sense of novelty dies out. Many users strongly affirm that they did not feel ‘present’ / truly a part of the experience, despite having the power to interact. And several analytical reports suggest that this glaring ‘lack of agency’ experienced by users en-mass, has been a key challenge that has limited the once boundless growth possibilities of virtual interaction platforms like Zoom, Teams etc.

...

Enter – The Metaverse.

The Metaverse

Recent times have witnessed the general public hailing the ‘metaverse’ as the undoubted way of life in the years to come. According to some, “life will only

become more ‘digital; and the metaverse will soon be a home for all”.

But what exactly is the metaverse?

A term coined by science fiction author Neal Stephenson, Metaverse refers to a virtual reality space where users can interact with one another and digital objects in a shared, immersive, and almost ‘realistic’ environment. Accessing this wonderous world basically entails a combination of both virtual reality, augmented reality, and mixed reality resulting in an extended reality or XR; which can be done so via smart solutions and leading-edge gears like Oculus headsets. Dubbed ‘a world of its own’, the metaverse is being developed by experts with the aim to create an ‘all-digital’ platform where users can do every-day real-world activities like shopping, playing games, watching movies, visiting a museum, or even fulfil professional obligations; all while never having to leave the comfort of their home. To put it simply, the Metaverse is a networked extended reality or XR in which humans and automated entities can interact and connect with each other for any purpose imaginable.

Avenues such as music concerts and related events, shopping, education, healthcare, urban planning, restaurants and nightlife, tourism – both leisure and cultural, gaming and e-sports, and of course, corporate workbenches, (in addition to the plethora of other avenues that we’ve missed out on naming here!) ... are all considered to be potential host environments within the metaverse in the future where incumbents would not just be able to interact, but also be involved in the experience in a very ‘real’ and sensory manner.

For example, the experience of attending an award ceremony in the metaverse would far greatly differ from the experience of attending the same award ceremony on zoom. With the metaverse allowing

delegates the opportunity to not just enjoy a more realistic experience of the ceremony itself, but also allowing them the opportunity to 'take a tour of the award venue' as one would usually do while attending such events in the flesh. The same goes with activities like team-building exercises, training seminars, educational sessions and more. The platform's ability to provide you with a 'life-like' environment that can be explored and also provide you with the opportunity to interact with the 'avatars' of fellow users; where one's body language can be just as telling as what comes out from their mouth. All of these aspects coming together would afford for an extremely interactive and engaging experience that would allow users to certainly feel 'present in the moment'.

That apart, the digital nature of commercial transactions coupled with the acceptance of a variety of crypto-currencies has already made the metaverse even more alluring from the business stand-point, as several brands, companies and individual stakeholder have recognized with potential to create and monetize virtual spaces and experiences.

In fact, a recent analysis performed by Deloitte estimated that the impact of the metaverse to GDP in Asia could be between US\$0.8 and 1.4 trillion per year by 2035, which is roughly 1.3 to 2.4 percent of overall GDP. This may come to fruition over the long term should there be sustained technology investments made in the next five to ten years. How much is actually realised, and how quickly, depends on the unique strategies the underlying economies may take to accelerate economic benefits of the metaverse.

This analysis, consolidated into a report titled "**The metaverse in Asia – Strategies for accelerating economic impact**", showcases the potential impact of the metaverse in 12 Asian economies (Hong Kong,

India, Indonesia, Japan, Mainland China, Pakistan, the Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam), and highlights the strategies that these economies are adopting to reap the rewards of the metaverse. Each economy featured in this report is approaching the metaverse from its own unique direction.

The report also states that awareness of the metaverse in Asia is high, and early metaverse platforms are already being used by millions of people in the region – gaming, socialising, creating digital twins, attending concerts and purchasing items. For example, South Korean app Zepeto has over 300 million registered users worldwide. However, a fully immersive metaverse with smooth real-time rendering of visually rich worlds for millions of simultaneous users is still years away.

Nevertheless, the metaverse is envisioned to create new market, business and employment opportunities as well as improve the way we work, consume and collaborate. If these developments are fully scaled, it will be transformational for the more than 4 billion people who live, work, and play in the region.

In fact, the report states that from software to hardware, regulators to entrepreneurs, cultural to digital talent, Asian economies are leaning in from many directions in all things metaverse. Some key highlights of the region include the fact that:

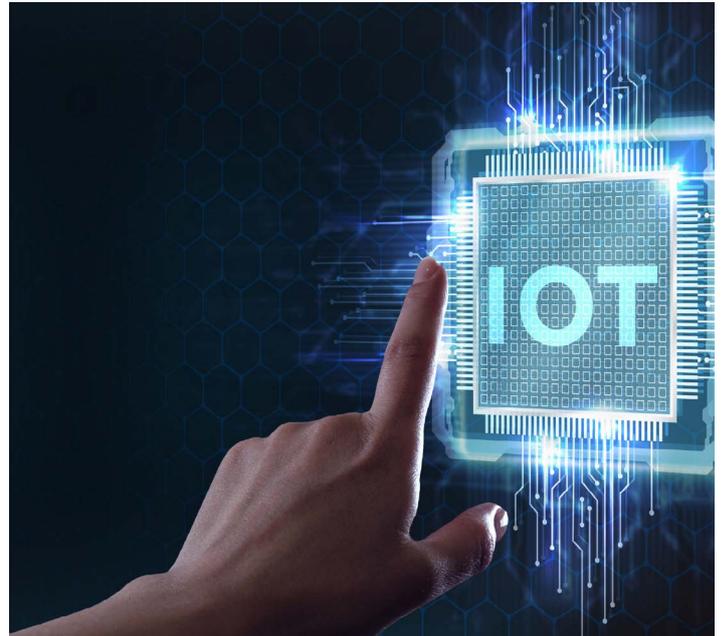
- * Asia dominates the hardware supply chain in terms of raw materials and the manufacture of electronics and semiconductors.

- * The region has over 1 billion mobile gamers, the biggest mobile player base worldwide.

- * South Korea was the first major economy to articulate a comprehensive blueprint to foster its metaverse industry
- * On the regulatory front, Singapore, Hong Kong, India and others are creating positive business environments and instituting clear regulatory guardrails, ensuring businesses and consumers alike can engage with the metaverse safely.
- * Indonesia, Thailand and Vietnam are pioneering new business models especially among small- and medium-sized enterprises, and innovating with web3 and blockchain technologies.
- * The region has rich and diverse cultural legacies to tap into to develop compelling content and experiences. For example, Japan is leveraging its heritage as a pioneer of the video game industry to create new metaverse industries.
- * India, the Philippines and Pakistan are key sources of global tech talent.

Duleesha Kulasooriya, managing director, Center for the Edge, Deloitte Southeast Asia, shares, “The metaverse is inevitable. Developing the technology stacks, human capital and regulatory frameworks to realise Asia’s trillion-dollar metaverse potential will benefit a wide range of industries and economic activities. And the successful future of the metaverse calls for action not just by governments, but all ecosystem actors. While the metaverse is still in its early forms, it is now a good time for businesses and players to experiment, find their edge in the metaverse, and identify opportunities to scale these edges.”

The Internet of Things (IoT)



The Metaverse and its successful integration depends heavily on how well data from the real world can be infused into the virtual world. And this is where IoT innovations come into play.

What exactly is IoT?

The Internet of Things (IoT) is the network of physical devices, vehicles, buildings, and other items embedded with electronics, software, sensors, and connectivity which enables these objects to connect and exchange data. In fact, IoT devices are connected to the internet and can communicate with each other, enabling real-time monitoring and control of various systems; wherein the use of IoT technology allows for the seamless integration of physical devices and systems into virtual environments, enabling professionals to remotely monitor and control equipment and systems from anywhere in the world.

As a concept IoT has been present and working for many years now, and the world has greatly benefited from IoT innovations like smart cameras, phones, and

other tech devices that use physical or real-time data from the real world through smart sensors etc. When we look at this from the perspective of the Metaverse as it's already been described earlier; the successful existence of the metaverse depends on how efficiently, meticulously, accurately, and more importantly, how securely the data extracted from the real world can be mapped and fitted into the virtual setting; all in real-time. IoT and the technology behind its smart solutions have the potential to fill this gap perfectly and ensure a more seamless process of creation of the Metaverse in such a way that people will be able to switch between the Metaverse and the real world without any lags, delays, interruptions, or threatening issues.

In fact, the following are 5 ways that IoT can possibly be a huge 'enabler' of the Metaverse:

IoT enabled connected devices can enable 'realism' within the Metaverse: The replication of real-world settings and situations is essential for the Metaverse to develop in a way that is more in line with reality. The essential yet challenging issue of integrating hybrid data with the cloud or digital infrastructure will be resolved by connected devices. The foundation for creating complex systems like virtual simulations is this integration.

IoT will facilitate the integration of digital content into a physical setting: The Metaverse can only develop a fully integrated collaboration with the real world when it is facilitated by IoT. By developing an interoperable, seamless set of technologies to incorporate digital content into a physical world, IoT will play a crucial role in establishing numerous building blocks for the metaverse. Practically speaking, this could mean using immersive experiences and digital twins to produce real-time feedback control over objects like machines and equipment that are truly in the physical world.

The metaverse will be centred on data collection, which is where IoT plays a huge role: To enable accurate digital avatars and virtual simulations, the Metaverse needs data from the real world that is responsive and appropriately secured through mass ingestion. In essence, the Metaverse calls for the incorporation of genuine metadata and live data from the physical environment with scanned items. Moreover, IoT devices can be used to gather data from the metaverse itself, which can be used to improve and create more personalized experiences.

IoT will bridge devices and metaverse: The core of IoT is connecting an environment's digital senses. In the near future, it will be commonplace to handle raw IoT data in a manner that the Metaverse would be able to use it immediately. Connecting information and metadata to physical devices is crucial to the system's decentralised value production.

Digital Twin Technology + IoT will make the Metaverse more realistic and immersive: A digital twin is a digital representation of an intended or actual real-world physical product, system, or process that serves as the effectively indistinguishable digital counterpart of it for practical purposes, such as simulation, integration, testing, monitoring, and maintenance. Users will be able to access, visualise, and analyse equipment performance data thanks to digital twins and the Internet of Things (IoT); and thereby be able to group sensors and their data in almost real-time; which in turn would help to more meaningfully integrate the "real" and "virtual" worlds. Scanned artefacts that can interact with the real environment are part of the metaverse. However, what gives the Metaverse its meaning is the connection of a physical object with actual metadata and a live data feed from sensors and other sources; all of which can be streamlined efficiently by combining Digital Twin technology with IoT.

How Exactly Does Professional AV Play Into This Picture?

With both the Metaverse, as well as IoT being constantly evolving as individual concepts, while also evolving on a different tangent as one symbiotic ecosystem as well; together, the metaverse and IoT have the potential to revolutionize the professional AV industry by providing new and exciting ways for people to collaborate, communicate, and create – all across multiple spheres.



One of the most significant ways that the metaverse and IoT will impact the professional AV industry is through the use of virtual and augmented reality (VR and AR) technology. First up, the proliferation of AR and VR, and the increasing need for the experience to be more and more 'realistic', will consistently call on the need for enhanced systems in the form audio devices (spatial audio etc) as well as visual devices (wearable screens and headsets etc) – all in varying forms and configurations that would best suit the application requirement.

On the flipside, in the future, professionals in the AV industry will be able to use VR and AR to design and test audio and video systems in virtual environments before they are built in the real world. This will allow for greater efficiency and cost savings, as well as the ability to test and iterate on designs in a safer and more controlled environment. Additionally, VR and AR can be used to provide immersive and interactive training for AV professionals, allowing them to learn and practice new skills in a virtual environment.

Also, in addition to the realms of collaboration and communication, virtual events and other such immersive experiences, the metaverse and IoT might benefit the growth of the professional AV industry by fostering the development of new products and services such as remote monitoring and maintenance of AV systems, which can be provided to customers on a subscription basis; or creating smart and connected systems that can automatically adjust to the needs of the users. No wonder industry professionals believe that developments within the Metaverse and IoT will continue to impact developments in professional AV, and vice-versa!

NXT INTERACTIVE is a digital design firm specializing in the creation of interactive applications; with the objective to integrate leading-edge technologies and products in order to leverage the digital space creatively to boost business outcomes. The firm has used technologies like Metaverse, AR/VR, Blockchain and AI to create immersive solutions across industry segments such as events, health, lifestyle and more; with the solutions on offer ranging from developing custom mobile/web applications, to developing AR/VR games, to providing extensive trainings in the usage of metaverse platforms, to creating NFT retail websites, and more.



In a candid interview, **Naval Joshi, co-founder, director and engineer at NXT INTERACTIVE** shares his in-depth views on the relationship that the metaverse and IoT share with professional AV; the

excerpts of which are noted below;

People these days are talking about products and technologies veering towards being more inclusive of concepts like IoT and the metaverse ... Please explain your views about how this concept translates when professional AV is considered in the picture.

NJ: When it comes to professional AV and its incorporation into IoT and metaverse systems – the scenario definitely works in favour of both sides with the promise of bringing significant benefits. For example, in a conference room setting, IoT-enabled devices such as smart cameras and microphones can automatically adjust their settings to optimize the audio and video quality for the users in the room. This can improve the overall experience for conference attendees and make meetings more productive.

Additionally, the use of leading-edge professional AV in metaverse systems can enable more immersive and engaging experiences, such as virtual reality (VR) and augmented reality (AR) conferencing. This would allow users to feel as if they are in the same physical space as the other attendees, even if they are located in different parts of the world. It can also open up new possibilities for remote collaboration, training and even virtual events.

However, the adoption of these scenarios, especially within the Metaverse can also bring new challenges, such as security and privacy risks associated with connected devices and the complexity of integrating different systems and technologies. Therefore, it is important for companies to carefully evaluate the benefits and risks of incorporating IoT and metaverse technologies into their professional AV solutions.

What current products/systems/solutions cater to IoT/Metaverse capabilities? What are the characteristic traits of these systems? And exactly how do they fare in terms of performance/capabilities vs economic viability?

NJ: There are several products, systems, and solutions that currently cater to the metaverse and IoT, each with its own set of features and capabilities. Some examples include:

IoT platforms: such as Amazon Web Services IoT, Microsoft Azure IoT, and IBM Watson IoT, which provide the infrastructure and tools to connect, manage, and analyze IoT devices and data.

Smart building systems: such as Crestron, Control4, and Siemens Desigo, which allow for the automation and control of various building systems, such as lighting, HVAC, and security, through a single user interface.

Virtual event platforms: such as ON24, vFairs, and 6Connex, which enable organizations to host virtual events, including trade shows, conferences, and product launches, that can be accessed by attendees in a virtual environment.

Virtual and augmented reality headsets and software: such as Oculus Quest, HTC Vive, and PTC Vuforia,

which allow users to experience immersive, interactive virtual and augmented reality environments.

In general, these systems are characterized by their ability to connect and communicate with a variety of devices and systems, as well as their ability to provide data and insights in real-time. They have the potential to bring significant improvements in efficiency, productivity and the user experience, while reducing costs.

In terms of performance and capabilities, these systems are generally considered to be high-performing, but the performance and capabilities can vary widely depending on the specific system and its implementation. In terms of economic viability, the cost of these systems can vary widely as well, depending on factors such as the complexity of the solution, the number of devices or users it needs to support, and the level of customization required. Additionally, the costs associated with implementation, integration and maintenance also need to be taken into account. Thus, the investment in these systems may not be suitable for all business as the ROI may take a while.

What are the challenges involved in designing and integrating IoT/Metaverse enabled systems? What are the current solutions to these challenges? Also, please feel free to share if you feel the future could present a more efficient way to deal with the aforementioned challenges?

NJ: Designing and integrating IoT and metaverse-enabled systems can be challenging for several reasons. These may include:

Complexity: Connecting and managing a large number of devices and systems can be complex, and requires

the integration of various technologies, such as sensors, communication protocols, and data analytics.

Security: IoT and metaverse-enabled systems introduce new security risks, such as the potential for unauthorized access to devices and data, as well as the possibility of cyber-attacks.

Privacy: As these systems collect and process large amounts of personal data, ensuring privacy and compliance with data protection regulations is crucial.

Scalability: As the number of devices and users continues to grow, IoT and metaverse-enabled systems need to be scalable in order to handle the increased volume of data and users.

Interoperability: As different devices and systems may use different communication protocols and standards, achieving interoperability between different systems can be challenging.

Having said that; there are some viable solutions currently available to deal with these challenges. These include:

Secure IoT platforms: Secure IoT platforms provide the infrastructure and tools to connect, manage, and analyze IoT devices and data, and can help to simplify the complexity of IoT systems.

Security and privacy solutions: These include encryption, secure communication protocols, and access controls, can help to protect IoT devices and data from unauthorized access and cyber-attacks.

Interoperability solutions: These include the use of standard communication protocols, such as MQTT, and standard data formats, such as JSON, which can help to achieve interoperability between different devices and systems.

Edge Computing: To improve scalability and reduce the volume of data that needs to be transmitted to the cloud, edge computing solutions can be used to process and analyze data closer to the source.

Also, I feel that in the future, the development of new technologies and standards, such as 5G networks, and the evolution of edge computing technologies, could enable more efficient and secure communication between IoT devices and systems. Additionally, advancements in artificial intelligence and machine learning could enable systems to more effectively analyse and process the large amounts of data generated by IoT devices. And perhaps more crucially, the concept of Zero trust network could be a future solution to the security challenges.

Your thoughts on the future of such technologies and the kind of impact it can have on individual projects and the professional AV industry as a whole.

NJ: The future of the Internet of Things (IoT) and the metaverse is likely to bring significant changes and advancements in a variety of industries, including the professional AV industry.

IoT technology is expected to continue to evolve and become more prevalent in professional AV systems, enabling automation, remote monitoring, and control of AV equipment and systems. This could lead to greater efficiency, cost savings, and improved user experiences in a variety of settings, such as conference rooms, educational institutions, and entertainment venues.

Additionally, the metaverse is also expected to have a significant impact on professional AV, with the use of virtual and augmented reality (VR/AR) technology becoming increasingly prevalent. This could enable new forms of immersive, interactive communication

and collaboration, and open up new possibilities for virtual events, training, and remote work. Also, the implementation of standard communication protocols and data formats could help to achieve interoperability between different devices and systems and make it more secure.

Overall, I believe that the future of IoT and the metaverse is closely linked with the future of professional AV – with this symbiotic relationship having the potential to bring significant benefits in terms of efficiency, productivity, and user experience. And as the technologies continue to evolve, it will be important for companies to stay informed and adapt to take advantage of the opportunities they present while mitigating the challenges they bring.

NXT Interactive



NXT Interactive developed a 3D life-like virtual replica of their client's new showroom. To enhance the experience of a user in an engaging manner within the store, intrinsic Animations & Web Virtual Reality was used. They also utilized a combination of optimised 3D Models, lighting & texturing that brought a real look to the laminate textures. The virtual interactive experience allowed customers to explore the new showroom's design, functionalities, layout, products, and even book consultations.



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ArtScience Museum and The Shoppes at Marina Bay Sands unveil teamLab installations created with digital technology to the delight of the public

by Thomas Prakasam



teamLab, *Autonomous Abstraction, Continuous Phenomena from the Universe to the Self*.

FACTFILE

Project Name: *Future World: Where Art Meets Science* at ArtScience Museum and *Digital Light Canvas* by teamLab at The Shoppes at Marina Bay Sands

Project Location: Singapore

Project Segment: Museum and Retail

Project Highlight: Interactive space

Key AV Brand: Epson Projectors

Since its formation, teamLab has established a reputation for artworks that use digital technology to create experiences that wow audiences globally. Formed in 2001, teamLab is an international art collective that includes artists, programmers, engineers, CG animators, mathematicians and architects.

Their project at Singapore's iconic Marina Bay Sands once again brings art and technology to the forefront for visitors to immerse, interact and, as manifested by teamLab, 'transcend boundaries in our perceptions of the world, of the relationship between the self and the world'.

The 'Future World' galleries at ArtScience Museum allow visitors to immerse themselves in a world of art and science through a collection of interactive digital installations. teamLab, in collaboration with ArtScience Museum, unveiled new installations at 'Future World' titled 'Exploring New Frontiers' that opened on the 26th of November 2022 to the public.

The following artworks were newly installed:

- **Autonomous Abstraction, Continuous Phenomena from the Universe to the Self.** This new installation explores the phenomenon of self-organisation or spontaneous order. When people touch the projected images, the rhythm of the blinking hues change and are randomised, but the dots close to each other once again cause a spontaneous order phenomenon and begin to blink in unison.

- **Aerial Climbing through a Flock of Colored Birds.**

This is an interactive artwork created from horizontal

bars of varying colours, projection, light and sound. When people climb into the artwork, the bars shine brightly and produce a sound specific to the colour. The more people climb onto bars of different colours, the more sounds will be played at the same time.

- **Sketch Flight.** In *Sketch Flight*, visitors can colour an aeroplane, a butterfly or hawk on the paper provided and see the picture drawn appear flying through an imaginary world on the giant screen in front of them. Visitors can use a tablet device to control the flight of their aeroplane, butterfly, or hawk, and see the world from different perspective on the screen.

As teamLab has continued to transform the artworks in 'Future World' since its opening 2016, they were well versed in the space. teamLab created the entire experience considering the space size and creating seamless connectivity within the different experiences.



teamLab, *Sketch Flight*.



Takashi Kudo from teamLab highlights, “teamLab always research and try to create something – a new relationship between humans and the world and ‘Future World’ is based on that concept. We want to bring the visitor inside our imagination with physical bodies. So we need to make a very immersive space.”

For the immersive aspect to happen, teamLab depends on technology. Although it’s a tool like paint, it does greatly affect the creation, just like how the painting en plein air developed because it became possible to bring paints outdoors. teamLab has worked with Epson on previous projects and once again relied on Epson projector technology for this project.

The ‘Exploring New Frontiers’ galleries feature more than 30 projector units comprising Epson EB-PU1006W, EB-PU2010B and EB-PU1008B, as well as a variety of different lenses.

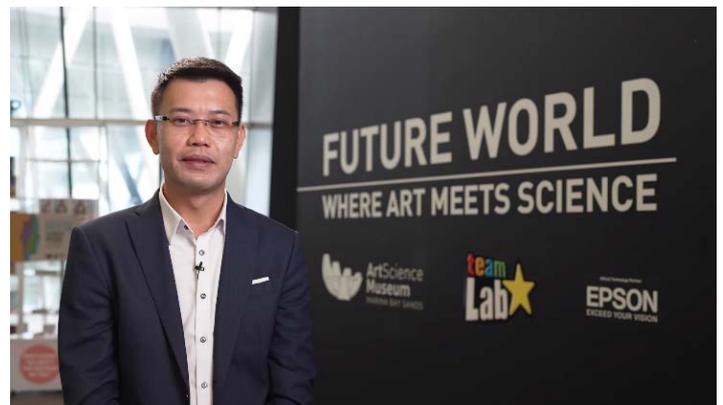
All the projectors work to realise the artwork space that teamLab wants to create. For instance, key to the experience is the importance of teamLab’s software working seamlessly with the projectors to ensure the interaction is almost instant for the visitors. This was achieved with aplomb as visitors are treated to vibrant and colourful images that instantly react to the action of the visitors.

Another space with Epson projectors is *Digital Light Canvas* located within The Shoppes at Marina Bay Sands. This space was also created by teamLab.

“The concept of *Digital Light Canvas* is more like a co-creation. People draw on the paper provided of animals, and it becomes objects in our digital space, which then become products like T-shirts, badges and tote bags. We create it in Sketch Factory, so we needed good printers to make it, and we really appreciate all the support Epson provided us,” said Takashi.

The *Digital Light Canvas* also features Epson EB-800F Full HD projectors. The projectors create the illusion of the different animals ‘making their way’ to the printer space to become merchandise.

Takashi highlights that their art, vision and creativity can only be realised with technology partners like Epson.



Alex Chua, team lead, Epson Sales Division, VI Business, comments, “Epson is honoured to serve as the Official Technology Partner of Future World at ArtScience Museum, Marina Bay Sands, and the collaboration partner of teamLab. Since 2018, Epson and teamLab have been working together on regional projects.



teamLab, *Graffiti Nature - Red List*, *Digital Light Canvas* © teamLab.

ArtScience Museum’s galleries and the *Digital Light Canvas* space continue to be successful due to teamLab’s innovative, technologically driven projects. Alongside the immersive and interactive art experience created by teamLab, Epson, as a leader in 3LCD technology, produces vivid colour reproduction to help bring the spaces to life. Some of the exhibits could only have been realised with the unique zero offset capabilities of the lenses. Also, the projectors’ compact and versatile nature work well in challenging spaces to create a seamless experience.”

Alex continues, “Epson understands the need for, and the importance of, digital content in immersive setups. Thus, Epson emphasises sharp, precise, and high-quality projectors that facilitate immersive and interactive projection. Epson is proud to have met all stringent requirements of teamLab and overcome the challenges of this project.”

Check out the video showcasing the immersive spaces [HERE](#).



teamLab, *Aerial Climbing through a Flock of Colored Birds*.

Epson

teamLab – Future World: Where Art Meets Science

Digital Light Canvas by teamLab

A Museum of a 'Giant Stride' into the Past

A Combo of Art & AV at India's Largest and First-of-its-Kind Dinosaur Museum and Fossil Park

by Ram Bhavanashi



FACTFILE

Project Name: Dinosaur Museum

Systems Integrator: **Vama Communication, Gujarat**

Project Location: Raioli, Balasinour, Gujarat

Project (AV) Cost: ₹ 21.99 Crore

Project Owner: Tourism Corporation of Gujarat Limited (TCGL)

Project Commencement date: 18 June 2020

Project Segment: Infotainment

Project Commission date: 26 June 2022

Project Consultant: **Rhino Engineers Private Limited, Gujarat**

Project Highlight: India's largest and first-of-its-kind Dinosaur Museum (22,000 Sq. Ft)

Project Monitor: **TWG Planning & Construction Consultancy Services**

Building museums is no big deal these days, they say, but no! This is not just big, but a giant deal. A very unique one too- elevating India's stakes high in the domain of science, natural repository in quaint fields like palaeontology, and the now-much-familiar domain of AV. The Dinosaur Museum and Fossil Park at Raioli, Balasinor in the North-western Indian State of Gujarat is truly a giant stride into the 'scientifically rich' past.

Ahmedabad-based AV consulting major Rhino Engineers and AV systems integrator Vama Communications have come together to create a grand audio-visual spectacle about the largest terrestrials that once strode the land.

An SIAsia exclusive on the grand AV narrative of India's largest and first-of-its-kind Dinosaur Museum.

Thanks to Steven Spielberg's 1994 magnum opus *Jurassic Park* that redefined not just how movies are made and experienced, but also people's understanding of what dinosaurs were all about. Albeit fictional, it elevated a whole big perception among people about those giant creatures, and led to fanciful storyboards of their life on the planet.

Everyone knows how a series of similar flicks thereafter took the people's imaginations to newer horizons every time. At their fancied best, some even wished they lived in the age of dinosaurs or vice-versa.

Now, imagine your being on the same land mass where those giant creatures once roamed; and coming again alive full blown, and even telling you the reasons for their disappearance from the planet- and further, showing you some prima-facie evidences that essentially disprove the hitherto-popularized storyboards, and also reveal their own compelling situations forcing their exit.

While that's the big story today, drawing a global attention, the medium through which it is being told is a brilliant blend of art and technology of audio-visual expertise- from the Dinosaur Museum, Balasinor in Gujarat- the North-western State of India.

So, when the Chief Minister of Gujarat Bhupendra Patel recently inaugurated the Phase-II of the famous Dinosaur Museum at Balasinor – three years after the Phase-I – it wasn't just a *seamlessly syncing extension* to the earlier *giant* infotainment exploit; it was rather an unveiling of a narrative canvas that is 'larger-than-ever' of the ilk; an exemplification of knowledge dissemination of a very fancied, yet little-known subject of palaeontology in a very uniquely artistic way that connects both connoisseurs and commoners, as well as the domain coordinates.

"It's a combination of art and technology," sas Vandana Raj, CEO of Vama Communications, the Ahmedabad-based AV systems integration major, who had done the Phase-I part of the museum, and made quite a big name in the domain of museum AV.

According to reliable sources, UNESCO-IUGS has recognized the Raioli Dinosaur Fossil Park as IUGS Global Geosites – to be formally announced in 2023 – a matter of great honour and pride for Gujarat and India as a whole. It is also a recognition of achievements of Indian dinosaur researchers as well the associated foreign expertise.



“The way we married content and technology is one unique sort of innovation,” she explains. “Not many Indians know what is palaeontology, or geology for that matter; our job, therefore, was not only making them

known, but doing it with a sense of relevance and connect to people’s thinking.”

That it is such an important global evolutionary info trove, the Government of Gujarat decided to further elevate its earlier initiative of information disseminative dinosaur museum to complete knowledge package on dinosaurs’ extinction in the region- with a new compelling narrative.

The significance of this initiative – even as it does the edutainment on the hitherto unknown domain for learning communities – is it opened a new vista for researchers to reckon the new narrative on the extinction of the most fascinating animals humans have ever known.

“The objective was to create a technology-driven, state-of-the-art dinosaur museum where fossilised dinosaur remains would stimulate a *dinosaur tourism*,” reveals **Narendra Naidu, principal consultant and managing director of Rhino Engineers**, the Ahmedabad-based AV design consultancy major.



“It was envisioned to preserve and document Gujarat’s fossilised heritage, supporting it with interactive and experiential space, in tune with contemporary

and futuristic technology, to promote *Geo Tourism*,” Naidu explains. “The ultimate aim was to take Gujarat’s unique natural legacy to a global level, and excite interest among people about the subject of palaeontology, and its importance- even as it contributes to learning enthusiasm among children and young citizenry through infotainment.”



The story actually began in 2018 when Tourism Corporation of Gujarat Limited (TCGL) invited RFPs for conceptualizing and curating a museum on dinosaurs. While many aspirants have vied for the prestigious task, Vama Communications landed the project on QCBS (quality-cost-based-selection) mode. Rhino Engineers stood onboard as the Project Technology Design Consultant.

While the design and deployment expertise came respectively from Rhino and Vama to provide the body and backbone to the giant manifestations that the Dinosaur Museum was supposed to exhibit, the quintessential component of accumulation, assemblage and authentication of bones, teeth, and other fossilized skeletal parts of the extinct animals came from the man who personified a *‘mission dinosaur’* in the country for over four decades – since his first finding the eggs of the giant creatures as long ago as 1981 – **Prof. Dhananjay Mahendrakar Mohabey**.



“What began like an accidental finding 40 years ago, has gradually evolved into a mission, and a grand vision,” says Prof. Mohabey, who is currently retired from his famously held profile at the Geological Survey of India, but still active in the domain, wearing multiple caps. “It took countless number of travails of all kinds and levels before we could arrive to a point of acclamation.”

Understandably, it took as many as 16 years, since the first finding of dinosaur eggs, for the Government of Gujarat to declare Raioli as a ‘Protected Site,’ in 1997, and another two decades to initiate a dedicated dinosaur museum creation. While the initial seeding began in 2005 via setting up an Information Centre – which got elevated to a basic format of museum in 2008 – it took another nine years for the State Government to initiate an *Action Plan* in 2017 to rope in TCGL for the RFPs and due diligence.

Interestingly, “Steven Spielberg’s release of Hollywood movie *Jurassic Park* had significantly contributed to the sensitization among government ranks for

conservation of the dinosaur fossils that had begun to fall victim to vandalism,” recalls Prof. Mohabey. “The excitement that the movie generated helped the officials realize importance of global scientific treasure.”

Phase-I: The Time Dinosaurs Lived



For one’s reckoning, there wasn’t any phased conception for the museum when it was first ideated. It was proposed to redevelop the existing Information Centre into a technology-powered modern, mega showcase. However, owing to its age-old texture, it had to be remodelled with a lot of structural interventions. With all the necessary civil, acoustical, audio-visual and curatory ingredients happening from Vama, and Rhino on one side, and State and Central agencies such as TCGL and GSI on the other, the Phase-I museum finally took shape in June 2019.

The TCGL teams were led by the then Commissioner and Managing Director of Gujarat Tourism Jenu Dewan while the GSI teams were led by Prof. Mohabey. Notably, a galaxy of global palaeontology and museum experts has also contributed to the cause of the Dinosaur Museum.



One of the Infotainment Galleries on the fossilization process.

The museum had a total of nine galleries spread over a basement and ground floor, in addition to a large atrium- all done in with high degree of audio-visual technology intervention that comprised virtual imaging and 3D, apart from display panels and miniature sculptures.

An acknowledged filmmaker that she is, Vandana apparently placed the narrative as central to the story telling that the museum intended to do. "Technology is just a medium to showcase the narrative," she says, "we designed it in such a way that the narrative takes the visitors deep into the Cretaceous Era, even as it brings the other two eras of Triassic, and Jurassic too into the picture."



Showing the dinosaur story of Raioli.

That the story of dinosaurs wouldn't be complete if it doesn't speak about the story of the earth, evolution of life, fauna and flora, the team dinosaur museum project decided to make its narrative a holistic AV canvas to relive all that. "Only then, it makes sense to talk about dinosaur," reasons Vandana. "For, the simple fact that how did those giant creature evolve, survive and then suffer extinction."

Phase-II: Decipherment of Extinction



Symbolizing the process & methodology of excavation and figuring out fossils.

Apparently, the making of Phase-II museum has had a few stake-holding factors:

The TGCL's objective was to promote tourism in the State. In this case, it is *Geo Tourism* in general, and *Dinosaur Tourism* in particular. That the very term dinosaur draws global fascination, the initiative appeared possessing immense potential, and TGCL stood by the cause.

While it did achieve the purpose to a large extent with the Phase-I project, the COVID-related disruptions caused significant downslide in visitor footfalls and revenues; it needed a big cause to rejuvenate the tourism activity, and it came in the form of new startling findings from continued excavations- with a potential of rewriting the hypotheses for dinosaurs' extinction (in this region).

Scientists till then had been only talking about how dinosaurs evolved and lived, and only postulated how they disappeared- arguably, with a West-attested perception of asteroid impact. The new evidences suggested *devastating volcanic eruptions as the cause of Dinosaurs' extinction in India*. Promoting this to international forums would catapult both dinosaur park and tourism too to global identity.

"The new findings were truly startling," affirms Prof. Mohabey. "The volcanic eruptions causing the dinosaurs extinction was a totally new dimension to the hitherto- held assumptions," he explains. "This is exclusively local for India, and it's very unique."

Also- it was reckoned that it wasn't enough if the museum just spoke about how the Cretaceous animals lived and exited. It was equally important to talk what happened after they exited, how they got fossilized, and how do those fossilized artefacts authenticated as belonging to these giant creatures.



The decipherment process in a paleontology lab by scientists and researchers.

"A methodical decipherment and dissemination of this knowledge would be of great value for students, researchers worldwide, and an altogether new genre of infotainment and tourism," reasons Vandana.

Thus happened the all-the-more important Phase-II of the Dinosaur Museum.

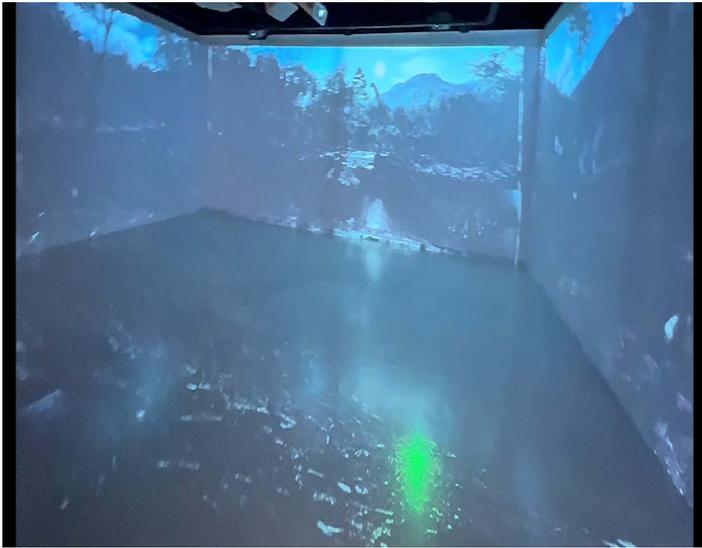
A New but Seamless Narrative

The Annex Building – as the new structure is technically called – is spread over 14000 square feet with six dedicated galleries and three atriums. It encapsulates the museum's overall identity. While maintaining a seamless continuity with Phase-I story, the second phase tells a different story- it's about decipherment of evolution of life forms, and including the world of dinosaurs from evolution to extinction.

"The beauty of this project – though it was not executed as part of a single large master plan – is it came out like a single seamless narrative," asserts Vandana.

"We kept three things in mind for future sustainability- enrichment, education, and additional revenue generation for the government," reveals Naidu. "Musing

with the sculptures and murals in the museum," these aspects are addressed via such AV exploits as VR, Holograms, 3D projection mapping, 5D theatres, digital forest, sensor-based animatronics, and more.



The Digital Forest.

Of the six new galleries, three are on lighter subjects with informative details, the other three weave in the magic of AV with the spell of dinosaurs. One specific gallery called *digital forest* is a visual projection of natural elements, and talks about the Cretaceous Era, with the area fully surrounded by dinosaurs, and other animals of the time. With illuminations, surround sound effects, and immersive narration, it imposes a feel upon people that they are part of the jungle.

Then, there is a dedicated gallery with a fictional film on Titanosaurid and Dinosaur babies trying wriggle out of carnivorous attack by the theropods. The film, roughly about five minutes of duration, running on a large curved screen with all those sound effects, will transcend the visitors into a cinematic setting of actual scenario.

"The 5D theatres then take the visitors to the next level of excitement," explains Vandana.



The 5D theatre.

According to the Rhino chief, two particular aspects form the best part of the second phase install-deployment of 5D theatrical, and special animatronic technology. Dynamic chair movements coupled with special effects like smoke, bubbles, rain, and lightning it creates a spell-binding impact in the 5D theatres. Second, at the intersection of the two buildings, is an install of one of the large-scale dinosaur species using animatronics technology depicting the animal's movement and body structure.

The other special AV exploits include:

360 Degree Virtual Reality: Installing multiple eye wear – the Oculus System – for an enhanced Virtual Reality trip in the land of dinosaurs

Experiential Lab: Depicting the entire process of fossil excavation, handling, photographing, mapping, and marking the coordinates with GPS etc.

280-degree Circular Projection: A cinematic circular extravaganza in the dinosaur era. A 3D hologram of different species of dinosaurs gives the visitors a dive into the cretaceous world with a simultaneous 360-degree view of the creature, making it feel realistic to the point where one believes the dinosaur is moving in real-time.

“The *Digital Forest* is one unique thing to speak,” chips in Vandana. “It has 10 projectors, synced in edge-blending but through a software, not any accessory hardware. So, that is an innovation we might want to say.” The immersive technology integration, blending with a serious subject of dinosaurs, is something to pride in,” she explains. “It’s the first-of-its-kind sealed museum on a very prideful natural possession of the country.”

Interestingly, a unique infrastructure was provided in the museum for establishing Advance Vertebrate Preparation Lab, for taking care of the fossils collected from proposed, new excavation (site)s, and to create manpower and expertise in the domain.

“Our focus was to display the reconstructed life-size skeletal models of giant dinosaurs and also scaled down skeletal models with their habitats,” explains Prof. Mohabey. “This was successfully accomplished, kudos to Rhino and Vama; they have done an incredible job, contributing to a great cause,” he commends.

Challenges of Dinosaur Scale

Simply put, the challenge of spatial scale- in time and space. Limited space, disrupted by time.

“That we had to work on the project during the pandemic, it got delayed by about three months, particularly, the civil work,” informs Vandana.

“Compounding that, was the non-availability of material causing added disruptions,” she explains.

“However, we tried hard to plug-in the shortfalls, and ensured that the delay did not widen.”

Content was, of course, was one very important challenge. All the content was done in 3D in Vama Communications’ in-house studios; a comprehensive challenge, given that it included accurate

characterization of each of those species, getting their anatomy and walk cycles right, then getting the approvals of palaeontologists- all that wasn’t an easy task.

On the other hand, the skeletal sculptures too posed potential challenges.



The skeletal recreation.

“We made a 29-foot-high skeletal sculpture of Titanosaurid which was a challenge to make it stand sturdily,” reveals the integrator. “It took time and lot of attention.”

While the limited space was one challenge, the poor acoustics was the other. Three galleries on the top floor, and two on the ground floor required special acoustic treatment. One ground floor gallery has 3D projection mapping, and the other has simple mapping film- but needing special audio. It has four vertical LED displays, to be synced with matching audio.

Vama Communications developed in-house their own handsets that can control the sound coming out from the LED screens. That apart, the *Digital Forest*, the curved video wall, and 5D theatre too required special acoustic treatment to instil the intended experience.



“Naidu was of great support in ensuring it all looked and sounded immersive,” commends Vandana.

The Unique Takeaways

In today’s parlance, any little thought about dinosaur drives one imagination straight to Spielberg’s *Jurassic* flick. It had a multi-million dollar budget and hundreds of artists and technicians working for many years, to unveil a grand but fictional spectacle.

“When we got into the project, we knew everyone would have similar expectations, but we had a very very different canvas to operate on; it’s a field museum, and not a silver screen,” says Vandana. “There can’t be any fancy, but pure facts- based on identification, research, evaluation and authentication, and then we needed to create a story that had to strike a chord with a society that not only includes serious researches and students, but also commoners,” she elaborates. “It’s a serious business, with much less budget than the Hollywood flick. But still we had to ensure every visitor

– irrespective of age or segment – would leave with a sense of belongingness to the experience.”

So, the unique takeaway for one would be a very judicious juxtaposition of information and entertainment,” Vandana asserts.

“We have tried to present it in a fashion that it would bring a lot of recognition to the work of palaeontologists. That’s one,” the Vama Chief elaborates. “To have it in a format that is easily understandable by anybody is second,” she concludes. “Even if a visitor doesn’t use or hear anything there, and just moves through the galleries, still would understand what is palaeontology and what it has to do with India, and Gujarat in particular. That, we can say is one achievement worth striving.”

THAILAND

Samsung Lights Up Bangkok Landmark with The Wall's 200 Million Pixels

The Wall transforms The Forest Pavilion into 360-degree theater that lets audience enjoy one-of-a-kind visual experience



FACTFILE

Project Name: The 'Chamber of Secrets' at the Forest Pavilion, The Forestias

Project Location: Bangkok, Thailand

Project Segment: Real Estate

Project Highlight: 360° animated theater

Key AV Brand: Samsung The Wall

Samsung Electronics' partnership with The Forestias by Magnolia Quality Development Corporation Limited (MQDC) – Thailand's biggest property development project, combining forest with residences and commercial areas has brought about a state-of-the-art display technology, The Wall, to The Forest Pavilion located at the heart of the project in Bangkok to showcase the most immersive cinematic experience. The Wall is a modular MicroLED technology that delivers incredible definition, without restrictions to size, resolution, or form. This innovation enables a 360-degree theater in The Forest Pavilion that lets the audience enjoy a one-of-a-kind visual experience.



The Wall's high-definition, MicroLED display measures 38.707m x 3.628m (126.99ft x 11.90ft) for a total surface area of 140.43m² (1,511.18ft²). The video screen is composed of 384 cabinets that are arranged in a line to produce one single 360-degree continuous image consisting of 4 sides, with a resolution of 46,080 x 4,320 pixels (or approximately 200 million pixels).¹

"This is one of the most exciting, world-class collaborations between leaders in novelty and sustainable living. I would like to congratulate all those involved for the strong partnership between Samsung Electronics and Thailand's largest property development project – The Forestias by MQDC," said Hyesung Ha, executive vice president of Visual Display Business at Samsung Electronics.

Keerin Chutumstid, president of The Forestias by MQDC, said the strong partnership with global technology leader Samsung Electronics secures its commitment to achieving its vision. The Forestias by MQDC aims to develop the best sustainable and innovative housing projects under 'sustainnovation' for all well-being.

"The Forestias is a sustainable, innovative forested district under MQDC's founding principle of 'For All Well-being' to benefit all life on Earth. Our 'Chamber of Secrets' is a world-class, 360° animated theatre

created by our main partner T&B Media Global Co., for our visitors to experience Thailand's first community designed for health and happiness of nature, animals and humans. Samsung's The Wall, a state-of-the-art MicroLED modular technology, enables The Forestias by MQDC to immerse visitors in an experience that feels as close to reality as possible," said Chutumstid.

The 'Chamber of Secrets' is the highlight inside The Forest Pavilion which delivers an amazing wrap-around experience surrounding the viewer with vivid images in vibrant-yet-natural colours, enhanced by the cutting-edge innovation of The Wall's industry-leading picture quality engine which delivers true-to-life imagery.

Samsung's The Wall is the sole innovation in the 360° animated theatre that helps convey a mesmerizing immersive experience showing The Forest Pavilion, which currently functions as the sales gallery and will soon be transformed into a shared learning centre for its residents.

The Forestias is the "Enchanted Community District in The Forest", where nature, animals, and people live together in a healthy, high-quality environment. The 398-rai district at Bangna-Trad KM7 addresses the world's social and environmental challenges with ecofriendly utilities and extensive green spaces and forest. Amenities include residential projects, a business district, a 6-star boutique hotel, a community and family centre, movie theatres, shops, restaurants, offices, a medical and healthcare centre, an innovation centre, a community area, a museum and learning center, and an extensive forest ecosystem.

[Samsung The Wall](#)

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